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No Increase in Newsprint Price Expected

Canadian Mills Likely to Follow International Paper Co. and Extend Present Newsprint Price of $50 Per Ton to End of First 1941 Quarter—Work on Power Plants Progressing—Other News.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., August 19, 1940—Canadian newsprint manufacturers are expected to follow the example of the International Paper Company in extending for a period of six months, or until the end of the first quarter in 1941, the present price schedule based on $50 a ton for delivery at New York and Chicago and on the Atlantic and Gulf ports. This stabilization of prices is in line with the policy announced last September by the Newsprint Association of Canada to the effect that it was the intention of the industry not to profiteer on account of war conditions and to make every effort to stabilize conditions both as to price and supply. While it is true that, owing to the premium on U. S. funds, Canadian operators have been receiving $55 in Canadian funds on each ton of newsprint in the United States. This has been offset to some extent by increased costs of supplies, labor, and taxes. Newsprint plants currently are running around 90% of capacity. Up to the end of July the total production for the first seven months of the year was 1,974,676 tons, as compared with 1,568,694 tons in the similar period of 1939.

Control for Timber Industry

Full Dominion control has been imposed on the timber industry in Canada to insure filling of war needs and to avoid price inflation.

No shortage of lumber exists in Canada, according to H. R. MacMillan, federal timber controller. But dry timber reserves will be heavily depleted in the next few months, and the lumbering industry has been instructed to increase production.

Prices will be maintained at levels existing in June to curb the effect on prices of competitive bidding by private consumers for stocks wanted in war contracts.

Work on Giant Power Plants Progressing

In the St. Maurice Valley, the newsprint manufacturing center of Quebec Province, work on the great engineering development of the St. Maurice Power Corporation at La Tuque (a subsidiary of the Brown Corporation and the Shawinigan Water and Power Company) has progressed so rapidly that it is expected to be completed before the end of the year, well ahead of schedule time. It will bring into development 162,000 h.p. of hydroelectric energy, and will assure the absence of any power shortage in the St. Maurice Valley. Four turbines are now installed and the construction of the two generators is well advanced.

The engineering work on this project has been carried out by the Shawinigan Engineering Company. Its magnitude is indicated by the fact that the concrete dam intake structure, built across the St. Maurice River at the foot of La Tuque falls, is 100 feet high and nearly a quarter of a mile long.

Paper Rationing in Britain

A dispatch from London states that Supply Minister Herbert Morrison has issued an order extending for a further period of three months from September 1 the rationing scheme under which licenses are required from the paper controller for the disposal of imported paper.

Under another order which becomes effective Friday, delivery or conversion of paper authorized during the present license period may be completed without further authority until September 4.

Licenses for paper production in the new licensing period may be issued and the production may begin before September 1.

The provision under which no license is required for the production of paper made mainly from waste paper, straw and other home produced materials has been modified by reducing the maximum percentage for imported raw materials from 33 to 20 per cent.

Sets Wages of Forestry Workers

The Provincial Government of Quebec has established by Order-in-Council a new scale of wages and working hours for Quebec forestry workers for the 1940-41 season. Forestry workers employed on a piece job basis will be entitled to earn either $35 or $58 a month depending upon established specific daily production figured out in cubic feet. Such men, the order states, must not be charged more than 60 cents a day for board in any camp.

(Continued on page 21)

Wausau Improves Its Sulphite Pulp Mill

Production of Pulp Increased to 60 Tons Per Day By Wausau Paper Mills Co., on Completion of Improvements Costing $50,000 — J. A. Auchter Goes With Kieckhefer Container Corp.—Other News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., August 19, 1940—Taking advantage of the favorable pulp market, the Wausau Paper Mills Company, Brokaw, Wis., has completed improvements and repairs costing approximately $50,000 in its sulphite mill, and has resumed operations. Since starting production July 11 with a 40-ton output, the volume has been increased to 60 tons per day, two-thirds of which is being sold on the open market.

When European pulp was obtainable at less than cost of manufacture, the company shut down its sulphite mill last September. The changed war situation led to a decision to reopen the mill, and the 60 men laid off in the fall were put to work in May to make improvements that would permit production of a better grade of pulp. Among the alterations were the installation of new combustion chambers for burning sulphur, almost complete reconstruction of the blow pits, acid tower repairs and improvements, new cooling systems for gases in the acid vats, improvements in screens, rebuilding of a well, renovation of the chipping equipment, and many additional minor repairs.

Plans to Use Entire Pulp Output

These improvements gave the company a better grade of pulp for its own mill and new markets will now be tapped with mill-brand watermarked bonds, ledger, mimeograph and ledger papers. These are being manufactured for the first time in years. The aim of the company is to build up its paper production to the point where the entire output of the pulp mill will be consumed by the paper mill.

Using a new method of handling rolls, the pulp is being dried on paper machines and is being delivered to the trade in rolls instead of laps. Most of the surplus is being shipped to the Kalamazoo, Mich., area.

Thirty thousand cords of hemlock, spruce and poplar have been ordered by the mill for delivery between now and April 1 in anticipation of the demand. Hours in the paper mill have been increased because of increased orders.

Prospects for the period immediately ahead are the best in years, according to Harold C. Collins, president of the company. With the price of unbleached sulphite up $29.75 per ton since a year ago, a vast and profitable market has been opened up for mills which produce more pulp than needed for their own consumption.

Tolls Assessed for Water Power

Tolls of $198,000 have been assessed against five water power users by the Chippewa and Flambeau Improvement Company for the first six months of 1940. The company controls flowage on the Chippewa and Flambeau rivers. Approval is sought from the Wisconsin Public Service Commission, and hearings will be held September 5 if objections are filed. The assessments are: Lake Superior District Power Company, Ashland, Wis., $10,499; Flambeau Paper Company, Park Falls, Wis., $12,620; Cornell Wood Products Company, Cornell, Wis., $4.393; Northern States Power Company, Eau Claire, Wis., $68,012, and Eau Claire-Dells Improvement Company, Eau Claire, Wis., $12,730.

J. A. Auchter Goes with Kieckhefer Container

J. A. Auchter, who resigned recently as vice-president and treasurer of the Nekoosa-Edwards Paper Company, Port Edwards, Wis., has accepted a position as assistant to the general manager of the Kieckhefer Container Corporation of Delaware, with general offices at Camden, N. J. Mr. and Mrs. Auchter will reside at Haddonfield, N. J., and will move there the latter part of August. Mr. Auchter will assume his new duties September 1. He resigned July 16, after being associated with the Nekoosa-Edwards company since September, 1934. He was also a director of the company.

Marathon Employees Hold Picnic

Employees and their families of the Marathon Paper Mills Company, Rothschild, Wis., held their fifth annual picnic Sunday, August 11, at Rothschild Park. Games and contests were held during the day, including a baseball game between mill unions in which Local 319 was the winner. A dance was held in the evening. A professional clown was on the grounds all day to entertain the children. Clarence Hussong was general chairman.

B. C. Pulp Co. Operates at Capacity

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., August 12, 1940 — Operations of the B. C. Pulp and Paper Company are being carried on to capacity at their plants at Woodfibre and Port Alice, B. C. The extensive remodernization and expansion program, which has been in effect at both these plants for the past two or more years, has now been practically completed but a certain amount of new equipment is continuously being added. At the present time the company is contemplating the installation of a new boiler plant at its scenes of operations at Woodfibre, B. C.

Wood Pulp Statistics

The 1940 edition of "Wood Pulp Statistics" has just been issued by the United States Pulp Producers Association, 122 East 42nd street, New York. As customary in previous issues, the statistics in the latest edition were compiled from original sources by D. M. Armstrong. The booklet contains 114 pages and provides a convenient arrangement of official data regarding the production, consumption and capacity of the United States, with imports and exports.

The price of the booklet is $2 a copy and may be obtained from the association.

Chicago Expects Active Paper Market Soon

Substantial Improvement in Demand Looked For By Midwest Paper Merchants on September 1 With Current Prices Remaining Firm—Paper Trade Concerned About Sales Tax Application.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., August 19, 1940—It is about this time of year that the Chicago paper industry expects the local paper business to move out of its summer doldrums. There is a fairly widespread belief that demand will quicken between now and September 1 and that the market, having consolidated its advance movements and followed the natural reactions after the sharp rise of a few months ago, is in a good strategic position to respond. Reports from mill representatives indicate that back logs have been pretty well taken up and that in some instances actual curtailment of production schedules may occur. However, there are no cases of prices slanting downward except in a very few isolated cases.

Newsprint reports continue to favor the possibilities of strength in the near future and the groundwood market also indicates a steady trend toward higher ground. Book and cover papers have remained more or less in a stationary position during the past few weeks although the market has absorbed higher quotations in good shape. Sulphites have shown little change although an increase in orders is in evidence in some quarters. Paper board production has been good and the demand reported satisfactory. Krafts have had fairly good going all summer long and local kraft executives are optimistic over the future. Waste papers have displayed some uncertainty but most grades are reported as retaining a buoyant quality.

Massengale at Eastern Meeting

Included among those sales executives who enjoyed the recent convention sponsored by the Eastern Paper Company at its headquarters in Bangor, Maine, was John Massengale, district sales manager for Eastern with offices in Chicago. The convention, held on August 8, 9 and 10 brought together the various sales officers of the company who visited both the pulp and paper making divisions, discussed sales policies and examined new equipment installed by the mill. A social program was also included in the three day meeting.

Final Entry Date for NPTA Exhibits

August 16 is reported as the deadline for space entries which will make possible participation in the exhibits to be held in connection with the Fall meeting of the National Paper Trade Association, Stevens Hotel, September 23 to 25. It is reported that advance registrations have been very good with approximately thirty exhibitors "on the line" two weeks in advance of the August 16 closing date.

Twine Club Gets "Set" For Fall

Chicago members of the Paper and Twine Club will have nobody to blame but themselves if future programs of that organization are not up to expectations. Recently committees were announced to prepare for both the Fall luncheon meeting to be held during the course of the NPTA meetings and for the annual conclave and outing set for next June. Heading the committee making the arrangements is Neil Nash of the Nekoosa-Edwards Paper Company. Other Chicago executives expected to deliver the goods in a big way and on both occasions include Ray Russell, Marathon Paper Mills; Ray Bee, Southern Kraft Corporation; K. L. Engholm, West Virginia Pulp and Paper Company; W. M. Parker, Columbian Rope Company; Frank Vaughan, Tested Papers of America; Brant Weathers, Union Bag and Paper Company; Phil Howard, American Paper Merchant and Howard Publishing Company and Henry Borchardt, Pilcher-Hamilton Company. Chicagoans fill about all but six or seven of the entire committee list.

Weigh Sales Tax Application

Paper manufacturers and jobbers with sales representation in Illinois, and who are specifically concerned with the application of Revised Article 5 issued by the Department of Finance covering taxability of shipments into Illinois, will be interested to know that the National Association of Tax Administrators met in Chicago this week to discuss standard regulations based on the Berwind-White case, and the case of Jagels Fuel Corporation versus McGoldrick.

It is known that the tax administrators of various states having sales taxes are considering three alternative regulations as follows: 1, requires that if an item is to be taxed it must be sold for use in the State and as a result of business activity the seller carried on within the State; 2, differs from 1 in that the sale of goods need not be connected with the business activity of the seller in the State, the only requirement being that the seller engage in business activity within the State and that the goods be sold for use or consumption in the State. Alternative 3 is the broadest of all and requires only that the goods be delivered in the state for use or consumption thereof.

Specific Light Expected from Pending Case

There is a case now pending in the Sangamon County circuit court, brought by two Indiana coal companies which, if accepted for review, will throw a specific light on the problem which is proving bothersome to the paper industry. A rumor circulating in Chicago that the Illinois sales tax would not be assessed on local paper offices if these offices were not on a commission basis, was scotched earlier in the week by the Department officials and it simply remains to be seen whether or not goods sent in from outside the State will be taxed as at present under Revised Article 5, by even more stringent regulations which might be adopted by the Tax Administrators association or exempted by possible court decisions of the future.

Coarse Paper Merchants Favor Credit Plan

Planning Committee of Coarse Paper Division of Philadelphia Paper Trade Association Considering Setting Up Credit Protective Bureau Similar to Method Now Used By Fine Paper Merchants.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., August 19, 1940—Anent the dinner meeting of the credit managers and members of the coarse paper division of the Philadelphia Paper Trade Association, which is to be held on September 19th at Kugler's Restaurant, 15th street above Chestnut, by the newly appointed Planning Committee appointed by president Nat Saxe, the committee has in mind establishing a setup for the members of the coarse paper division similar to that that now enjoyed by the members of the fine paper division in the operation of the credit protective bureau which was founded by the Typothetae of Philadelphia seven years ago this November.

Operation of Credit Protective Bureau

As is customary with the members of the fine paper division a list of customers who have been delinquent for a period of ninety days is filed on the 22nd of each month with the Typothetae. The Typothetae, under the direction of William A. Meeks, executive secretary, then makes a composite list which is known as the delinquent list. It is a hard and fast rule that no one on this delinquent list is sold any merchandise except for cash until their delinquencies are paid in full. In the seven years' existence of this credit protective bureau nearly Twelve Hundred Thousand Dollars have been collected through this agency and paid to local paper merchants. Five other divisions of the graphic arts, namely: binders, type-setters, electrotypers, roller manufacturers and typographers have availed themselves of this credit protective service. Last month, approximately five hundred calls for credit information were received by the Typothetae, 257 of which were from paper merchants.

The time has come when the coarse paper merchants feel they should have this same sort of credit protection, and it is with this purpose in mind that this dinner meeting is being held, namely, to lay the ground work for this all-important activity defined by the Typothetae for the betterment of credit protection among the coarse paper merchants. If constructive action is taken at this meeting, it will then be decided as to whether they will issue a separate list of delinquents or add theirs to fine paper delinquents.

Secretary Meeks Comments on Plan

In discussing the merits of this credit protective bureau, Mr. Meeks cited several cases of collapse of printing houses prior to the establishment of the bureau, among which was one for $200,000.00. This printing house was in competition with the better class of printers but resorted to cutting prices which the better class of printers could not meet, for the reason that this printer was not paying his bills and when his credit was exhausted the inevitable happened. Mr. Meeks stated that this could not have happened under this new credit protective set-up.

Trade Expects More Activity by Labor Day

Business in the paper industry here is hitching its sales chart to the Labor Day seasonal improvement which is customarily experienced each year. Only a few months ago the upward trend in the paper industry as a whole, took the spotlight from the war's roaring business in war machines. At this writing, however, trade activity fails to show the expansion it was experiencing some few months back. Reports generally indicate a continuance of hesitation and uncertainty with respect to the purchase of merchandise for future delivery although inquiries have been appreciably numerous. There is no forecast of opinion being offered as to how long this condition of affairs will prevail, but, as stated above, all are sanguinely hoping for the seasonal expansion with the advent of Labor Day.

Waterfalls Paper Mills Get Decision

Waterfalls Paper Mills recently collected from the Boston & Maine Railroad a judgment obtained against the railroad for damage to a shipment of paper occurring during the New England floods of March 1936.

Before the institution of suit, the Waterfalls Paper Mills made extended efforts to get from the railroad a reasonable adjustment of its claim but was met with an unqualified rejection of the claim by the railroad which asserted that the damage occurred because of an act of God and that the railroad was not, therefore, responsible. The railroad company asserted further that it had never before lost any action instituted against it because of a flood damage to a shipment.

The case was tried in the City Court of the City of New York and was appealed to the Appellate Term of the Supreme Court and after unanimous affirmance by that court, the judgment was appealed to the Appellate Division of the Supreme Court which likewise unanimously affirmed the judgment. Upon the affirmance by the Appellate Division the railroad company paid the judgment.

This case may be taken as an indication that the mere circumstance that damage to a shipment occurs in a flood is not in and of itself sufficient to exonerate the railroad company from liability and that if the railroad is to be exonerated, it must appear that it did not neglect reasonable safeguards to protect the merchandise of its shipper.

Join Greene, Tweed Staff

John N. Harper and Joseph H. Maloney have been added to the sales staff of Greene, Tweed & Co., manufacturers of Palmetto and other self-lubricated and sheet packings.

Mr. Harper will be stationed in Pittsburgh to cover the Western Pennsylvania territory and Mr. Maloney will be stationed in Cleveland and will cover the Northeastern Ohio territory.

Exporters Should Know Foreign Markets

By Bernard Sharp, President, Sharp Paper and Specialty Co.

It has been pointed out that trading in foreign countries is more hazardous today, than, perhaps, it has ever been. Each territory presents its own unique problem, of which the American exporter must be aware and wary. For example, let us cite the unsettled conditions in the Far East. It is virtually impossible to predict what wil happen in the "punitive war" which is being waged there. Any change in conditions, the re-establishment of peace, or other action on the part of the belligerents is likely to affect the American exporter dealing in these countries. On the other side of the ocean, lest we forget, is Herr Hitler, who has the faculty of doing exactly what all the experts say he will not do, and vice versa. To the American mills and the many "novice" exporters, this unsettled condition results in an uncertainty as to how to protect themselves against these unforeseen changes.

Knowledge of Foreign Markets Essential

The first principle of dealing in foreign countries is the same that applies to domestic commerce: you have to know what you are doing. It is necessary to establish a confidence between the buyer and seller. The exporter must familiarize himself with the requirements of the customer, and must fulfill these requirements. It is pointed out that unless the shipper has had long relationship with the buyer, he cannot place confidence in the consignee's acceptance of changes that may by necessity occur in original plans and estimates for forewarding. Delays involved in obtaining confirmation of revised forewarding schedules, may at the least burden the shipper with additional risks and costs, and at the worst leave some shipment stranded in an American or foreign port. The present haphazard methods of foreign commerce carried on by American mills and some exporters can only result in a falling off in American exports as soon as the present conflict, and the pressing necessity for American trade, is over.

Even today, the uncertainties as to the outcome of the conflict have caused a flood of cancellations from neutral countries, especially from those in Latin America. The pressure placed in these areas, particularly by Germany, has been strong enough to effect stoppage of orders even by some buyers of American paper of long standing. Such cancellations have been reported specifically from the A.B.C. countries—Argentina, Brazil and Chile—as having been caused by guarantees on the part of the German government agents that shipments of German and Scandinavian papers would be made either direct or through Reich agencies this Fall at as little as half U. S. prices.

Economic Stringencies a Trade Factor

The sudden falling off in export demand is also caused in part by economic stringencies, especially in South and Central America which depend almost entirely on the European market for some important agricultural and mineral outlets, and upon a three-cornered movement of trade to provide a normal flow of dollar exchange. In Argentina a loss of 25 per cent in export markets has been felt and the surplus of raw agricultural products has brought on an acute situation. Central American countries, too, which leaned largely on Europe for the sale of their coffees, cocoas, and other products, have felt shortages in dollar exchange more acutely than Brazil, Venezuela, Colombia and some others whose trade with this country is more favorably balanced.

While creating an unfavorable situation for the export firms specializing in paper, and serving mills either as outright buyers or as sales agents, these firms appear to enjoy one advantage in the matter of risks due to cancellations and shipping involvements, which many mills and other direct shippers may not share. This lies in the fact that their relations with the customers are of long standing, that the demand for exports is fully conditioned to the market in the face of normal competition and that they are in close contact with both customers and market conditions, either through established branches and agencies, or their own experienced field representatives.

Lack of Exporting Knowledge Harmful

However, the general influx of trading by the American mills directly or through "novice" exporters who are not acquainted with conditions can only result in disaster for them and in a loss of confidence on the part of the buyer. Inasmuch as there are no standard terms agreed upon in this country for export business, each new exporter asks different terms. Those familiar with the export problems know what they are doing and guide themselves by their experience and by a careful analysis of business conditions. The others who are new to the export business are not sure of what they are doing and hence are treading upon dangerous ground. In addition to this danger to themselves, an unfavorable impression is given to the customers and certainly does not aid in establishing a feeling of good will between the United States and these nations.

High Freight Rates Restrict Exports

Another important factor hindering the export trade of the United States is the high freighting charges asked by the American steamship companies. Few persons, apparently, have given it any thought nor questioned it. On some commodities destined for the Central American countries or the Far East, the freight is figured from 30 per cent to 80 per cent of the value of the merchandise. There is a need for the steamship companies to work hand in hand with the American exporters in promoting good will and in assuring a continued trade with these neutral countries after the war is over. Although many of the freights are "way out of line," nothing has been done to remedy the situation. For example, the price of newsboard is approximately $35 to $40 per ton, while the freight to certain countries is between $25 and $35 per ton. The same condition exists in various other commodities of paper. An agreement upon freights must be reached so that there will be a reasonable return to the steamship companies and yet satisfy both the buyer and seller.

Drop in Printing Paper Exports Unfavorable

The sharp falling off in exports of printing papers

in the past 30 days is regarded by many leading exporters in this line as a danger signal. It has been noted that both mills and dealers, sometimes little experienced in foreign trade, have been unusually active during the last six months in meeting newly arisen demands from various parts of the globe.

Unforseen Factors

Although much of this business is accepted for shipment against letter of credit, factors unforeseen by the shipper, it is reported, have too often made it impossible for the shipper to assemble documents for the bank in accord with the terms of the buyer. Uncertainties as to ocean sailing schedules, availability of space, rates, insurance, are all factors which may stand in the way of making deliveries, no matter on what basis the order may have originally been quoted. Although not precisely parallel, the disastrous conditions which prevailed during the market collapse of 1920 are cited as a warning in the present juncture.

David Killam Gets D. S. C.

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., August 17, 1940 -David Killam, 22-year old son of Lawrence Killam, president of the B. C. Pulp and Paper Company, and himself for a short time an employee of the research department of the same company, has been awarded the D.S.C. for distinguished service in action with the British Navy in which he holds the rank of Sub-Lieutenant.

David was working in the laboratory at Woodfibre when war broke out. He grew tired of waiting for a call for service with the Royal Canadian Air Force and when he found that a number of men in the Royal Vancouver Yacht Club were being taken for naval service he made a special effort to secure an appointment. Of the thirty applicants interviewed he was one of the four selected and immediately left for training in England.

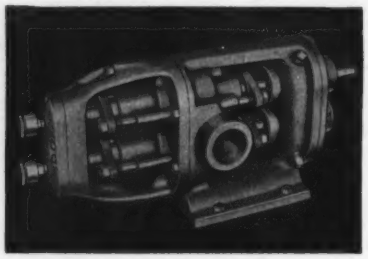
No details of his gallant deed have been published other than the announcement of the decoration in a supplement of the London Gazette. Sub-Lieut. Killam is widely known as one of the best skiers in Western Canada and has take a prominent part in tournaments at Banff and Mount Hood.

Plan Semi-Final Outing

The midwest division of the Salesmens Association of the Paper Industry holds its semi-final golf outing of the year next Friday afternoon, August 23, at the LaGrange Country Club according to the information released by Pat Patterson, Flambeau Paper Company sales executive and chairman of the Salesmens golf committee. LaGrange is reported as the home club of Jim Coy and Jack Burrus, two stalwarts of the Association and two tested veterans of the golfing wars. Thus both Pat and Ed Rolaine, assistant chairman, expect big things in the way of attendance and entertainment. The Association is expected to soon list the details of the final golf outing to be held at the Olympia Fields Country Club in conjunction with the Fall meetings of the National Paper Trade Association. To be held sometime between September 23 and 25, the event will attract the patronage not only of regular members but of visiting executives who have come to recognize the outing as one of the highlights of the entire year.

Bump Pump Co. Announces New Pump

An illustration is presented here with the new Bump Pump, made especially for paper mill requirements, by the Bump Pump Company, La Crosse, Wis. This pump is positive in its action and will handle acids and coating materials, also pulp, water



New Bump Pump

and condensate from dryers, etc. It is made in sizes for every plant requirement; quickly and easily cleaned. It is said to be economical in its operation.

Groveton Paper Mill Sold

[FROM OUR REGULAR CORRESPONDENT]

LEWISTON, Me., August 19, 1940—The paper mill properties at Groveton, N. H., long held by the Odell Manufacturing Company, a Maine corporation in which Lewiston-Auburn men were prominent officials, was sold Wednesday, to the Wyoming Valley Paper Mill Company of Northumberland, N. H., it was officially stated.

The sale to a unnamed party was predicted at a meeting of Groveton mill officials with New Hampshire state and Coos county officials last week in which loans were arranged to allow continued logging operations.

Difficulties among Odell stockholders led to long litigation and many hearings before Justice Manser in Auburn the past year. The solution was a merging of all interests in the Groveton plant with a view to disposing of it without cessation of operation.

Present in Lewiston to conclude the transfer of the Groveton property, Wednesday, was J. Wymyss, president of the Wyoming Valley Company, and Dr. Owen Smith, Portland, and J. E. Morse of Groveton, president and treasurer respectively of the Groveton corporation.

B. C. Removes Paper Firms From List

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., August 19, 1940—Names of a number of firms formerly identified with the pulp and paper industry in British Columbia have now been removed from the Provincial Companies' Register in B. C. by the Registrar in the course of his annual purge of the list and weeding out of deceased firms. Companies removed from the list and thus officially declared to be dissolved include the Vancouver Kraft Company, Ltd.

The Registrar also announces in the B. C. Gazette that unless just cause is shown within two months the names of Davis Pulp and Paper Company, Ltd., and Appleford Paper Products, Ltd., will be removed from the B. C. lists of extra provincial companies.

Obituary

William F. McClosky

William F. McClosky, 77, an official of Hoberg Paper Mills Inc., and a resident of Green Bay, Wis., over a half century, died recently in a local hospital.

William Francis McClosky was born April 17, 1863, in Granville, near Hudson Falls, N. Y. His father died when he was an infant and with his mother he came west to Wisconsin when six years of age. The family settled in Watertown and later lived in Sun Prairie, near Madison. Mr. McClosky was educated in a parochial school at Watertown, the Sun Prairie Public High school and later completed a commercial course at a college in Madison.

In 1920 he became affiliated in a clerical position with the old Green Bay Paper and Fibre Company. When that concern was merged a few years later with the Hoberg company, Mr. McClosky was named credit manager and purchasing agent. He was connected with these departments close to 20 years and up to the time of his death.

Mr. McClosky had been a staunch member of St. Patrick's parish for more than 50 years. He served as a church trustee and financial secretary for a number of years and was a member of St. Patrick's Holy Name society.

One of the charter members of the Green Bay Traffic club, he was one of its organizers and served as its second president. He also had been on the Association of Commerce traffic committee for a few terms.

Surviving him are his widow and four children, Geraldine, Bernard, William S., and Philip, all of Green Bay; a step brother, Joseph H. Boyle, Bark River, Mich., and numerous close relatives in Wisconsin and New York state.

Charles Meehan

[FROM OUR REGULAR CORRESPONDENT]

HERRINGS, N. Y., August 19, 1940—Charles Meehan, 73 years old, retired paper mill official, is dead following a brief illness. He was born in Canada but in his early youth he located at Berlin, N. H., where he was employed as a mechanic in paper mills. A few years later he became a master mechanic at a paper mill in Augusta, Me., where he was employed for several years. He later worked at the Pyrites mill and then went to Herrings in 1919 where he was master mechanic at the mill of Taggart Brothers. He retired about three years ago. The principal survivors are his wife, two sons and a daughter.

J. R. Geggie

John Richardson Geggie, 63, who retired four months ago as sales manager of the wholesale paper firm of J. C. Wilson Ltd., Vancouver, N. B., died recently. Mr. Geggie came from Scotland to British Columbia 29 years ago and has been associated with the paper trade since that time.

As a past master of Melrose Lodge, Vancouver, B. C., he was well-known in the Masonic Order. He was a member of Northwest Commercial Travellers and Associated Commercial Travellers.

He was active in the Terminal City, West Vancouver and Bowen Island lawn bowling clubs.

Indianapolis Demand Dull

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., August 19, 1940—No change has been seen in the general demand for paper or paper products in this section during the last week. Demand continues to be rather dull, due it is believed, entirely to seasonal conditions and to torrid temperatures, which have slowed business emphatically.

Jobbers of fine paper say the demand for fall from the printing trades continues rather disappointing. They say continued hot weather has hampered business. Of course, there is some demand for sulphites, but it is below expectations. Prices are being firmly held, however. There is no sign of any price increases and from indications there will be none that are not warranted by actual increases in production and distribution costs. The tendency is to keep everything within reason.

Building paper demand continues booming. Hot weather apparently has failed to deter it and all lines are moving nicely. The outlook for fall is promising and dealers are buying readily. The demand is not confined to a few localities, but apparently is distributed over a state-wide area and likely will continue until severe weather finally halts construction.

Paper box demand continues fair. Some users have curtailed their requirements, but others have increased. Demand this year from vegetable and fruit packers for special cases and other items will be seriously restricted due to hot weather having curtailed vegetable and fruit crops drastically.

A lessened demand is seen for waste paper and lower prices on some grades are reported. Much the same is true of the rag market.

To Conduct Researches on Hemlock

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 22, 1940—Representative Smith of Washington has introduced a bill (H.R. 10336) to authorize the Department of Agriculture to conduct certain researches, investigations, and experiments with respect to hemlock pulpwood and Sitka spruce barks.

The bill, which has been referred to the House Committee on Agriculture, provides "that the Secretary of Agriculture is authorized and directed to conduct researches, investigations, and experiments to develop new uses, outlet, byproducts, and markets for hemlock pulpwood and Sitka spruce barks for the production of tanning materials in the manufacture of leather from skins and hides.

"Sec. 2. There is hereby authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, the sum of $50,000, for the purpose of carrying out the provisions of this Act and for the construction of a pilot plant at the most suitable location in southwest Washington State to effectuate the purposes of this Act."

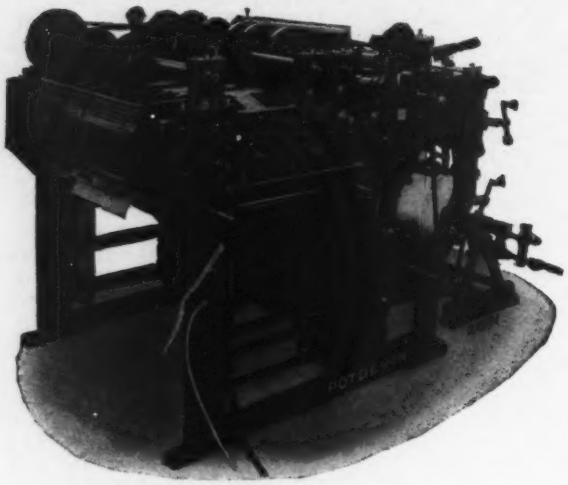
Order New Carthage Chippers

WATERTOWN, N. Y., August 19, 1940—The Carthage Machine Company, which recently developed and introduced into the market an improved type of chipper for use in chemical pulp mills, has received the contract to provide the new $3,500,000 Florida Pulp and Paper Company with these machines.

New High-Speed Sheeters

A new line of high-speed sheeters that handle heavy and lightweight materials equally well is announced by Potdevin Machine Company, 1223 38th street, Brooklyn, N. Y., manufacturer of paper converting and printing machinery. Glassine, cellophane, breadwrap and tissue are some of the materials run on these sheeters.

Potdevin sheeters serve a double purpose in that



NEW POTDEVIN SHEETER

they can be run as independent units with their own unwinds or direct-connected to roll-fed printing presses.

Devices to take both the curl and wrinkles out of the paper web before it is sheeted are incorporated. From the time they are cut, each sheet is carried by a positive gripper chain carrier until delivered on an automatically adjusting pile delivery.

Each model of sheeter cuts a large range of sheet sizes.

Better Port Facilities for Coast Mills

Northwest paper, pulp, lumber and other industries located in Camas and Washougal, Wash., will have easier access to shipping facilities soon through the construction of an inland port at those cities, located 128 miles up the Columbia river from the Pacific. The new port, whose facilities have already been enlarged, is expected to be ready for ocean-borne traffic by next April, according to Camas-Washougal officials who report that many important shippers already are planning to use the enlarged twin-city harbor upon its completion.

This new development, which is 21 miles below the huge Bonneville dam, is being undertaken through a Work Projects Administration project sponsored by the Port of Camas-Washougal. WPA crews will construct a dock 110 feet wide and 480 feet long which ultimately will be extended to 960 feet. Other work to provide complete facilities for deep water ships will include the construction of a transit shed, 60 by 120 feet, installation of a marine elevator and the construction of bulkheads, floats and riprapping.

The Crown Williamette Paper Company at Camas, one of the largest industries in the Columbia River territory, at present barges 80 per cent of its daily output of 525 tons to Portland, Ore., for transhipment. Lumber from the recently enlarged mills of the twin cities now is trucked to Vancouver for reloading.

The development was made possible by a WPA allotment of $105,560 and a contribution of $60,310 by the Port of Camas-Washougal.

M. & O. Patriotic Float Wins Prize

A beautifully-decorated red, white and blue float, surmounted by huge replicas of the American and Canadian flags, so impressed the judges that it won a first prize for its sponsor, the Minnesota and Ontario Paper Company, in the gigantic opening day parade of this summer's recent Minneapolis Aquatennial.

Enthusiastically acclaimed by more than 250,000 persons who thronged the miles of streets over which the colorful four-hour parade of more than 90 floats, 50 bands and bugle corps, and 20,000 uniformed marchers passed in review, the flag-adorned float was returned the winner over a crowded field of more than 40 outstanding entries in the industrial class.

In the center of the float stood a monstrous red, white and blue ball emblematic of the earth, and on each side of it a reproduction of the New World. Below, on either side, were two clasped hands, symbolic of the bond of unity and friendship which so closely unites the American and Canadian peoples. On the float were four beautiful girls in Aquatennial uniform.

Shown with first place trophy awarded by Aquatennial is Frank J. Hickling, comptroller of the Minnesota and Ontario Paper Company, who accepted the award for the company.

The Minnesota and Ontario Paper Company has plants at Fort Frances and Kenora, Canada, and, together with the Insulite Company, a main subsidiary, another plant at International Falls, Minnesota.

Southland Employees Insured

HOUSTON, Tex., August 19, 1940—The Southland Paper Mills, Inc., of Lufkin, East Texas' newest industry, has just put more than $1,000,000 of group insurance in force on its employees, according to H. J. Rossman, agency manager in Houston for the Equitable Life Assurance Society.

The plan put in force includes group life, accident and sickness, accidental death and dismemberment, and hospitalization with surgical benefits. Installation proceedings are under the direction of J. A. Bell, divisional group manager for Texas.

N. E. Paper Committee Meets

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., August 19, 1940—A meeting of the New England Paper Committee, of which A. V. Howland, of Tileston & Hollingsworth, is chairman, was held Friday, August 16, at the Nashua Country Club, Nashua, N. H. Walter E. Evans, of the Nashua Gummed & Coated Paper Company, was host at the meeting, which was purely social, with a golf tournament and dinner in the evening. Approximately 20 were present.

Howard M. Hubbard Resigns

Howard M. Hubbard has resigned his position as secretary-treasurer of the Harris-Seybold-Potter Company of Cleveland, Ohio, to become president and general manager of the Greenfield Tap and Die Corporation, leading manufacturer of taps, gages, dies, drills and other cutting tools for the metal working industries and the hardware trade. He assumes his new duties at the company's executive offices in Greenfield, Mass., on September 1.

In returning to his native New England, Mr. Hubbard terminates 10 years of service with the widely-known manufacturer of offset presses, paper cutters, wire stitchers and allied machinery for the graphic arts and paper industries. He joined Harris-Seybold-Potter a few years after that corporation was formed by the consolidation of the Harris Automatic Press Company of Cleveland, the Premier & Potter Press Company of Derby, Conn., and the Seybold Machine Company of Dayton. In 1931 the secretaryship was added to his duties and in 1936 he was elected treasurer and a director. As managing director of the Canadian and Seybold Divisions of Harris-Seybold-Potter, Mr. Hubbard has become very well-known in the industries that his company serves. He has appeared frequently as a speaker at conventions and trade organization meetings. He is a graduate of Northeastern University of Boston, in mechanical engineering, and of the Harvard Graduate School of Business.

Greenfield Tap and Die Corporation has manufacturing plants at Greenfield, Detroit, and Galt, Ontario, with company warehouses and sales operations in New York, Chicago, Detroit and other industrial market centers. In the move that takes Mr. Hubbard to Greenfield, the former president, Donald G. Millar, becomes chairman of the board.

Plans for Packaging Conference

A program for the next Packaging Conference based entirely on topics suggested by manufacturers and buyers of packages and packaging materials is the aim of the American Management Association, 330 West 42nd street, New York City, in planning the sessions which will run concurrently with the Eleventh Annual Packaging, Packing and Shipping Exposition, to be held in Chicago on April 1-4, 1941.

Henry J. Howlett, secretary of the association, has announced that active committee work on the program will start in the next few weeks, and is asking all individuals in the industry to send their suggestions for program topics to the Association, so that they can be considered by the committees.

"The program for the conference this year," Mr. Howlett said, "will be entirely 'custom-made,' in that the topics discussed will be those suggested by the very people who will form the audience. The association will deeply appreciate the readers of the PAPER TRADE JOURNAL sending in their suggestions. It is evident that the more closely the program follows the industry's needs, the more valuable it will be."

For the information of those who care to send the association suggestions, the conference topics usually fall into three broad categories: Unit Packing, Packaging, Packing and Shipping, and Packaging Machinery. In the past, under Unit Packing, such topics have been discussed, as: Informative Labeling, Planning a Package Family, Advertising Functions of the Package; under Packing and Shipping: Interior Packing for Shipping, Efficient Organization of the Shipping Department, and Container Closures; and under Packaging Machinery: Cooperation Between the Machine Manufacturer, Producer and Supplier, Pitfalls in Package Production, and Coordination of Designers and Production Managers. The character of the audience that the AMA Packaging Conference attracts and the division of the various sessions permit discussion of the most technical aspects of such topics.

To Cease Unfair Advertising

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 19, 1940—Eagle-Picher Lead Company, Cincinnati, Ohio, has entered into an agreement with the Federal Trade Commission to cease advertising that all insulation using paper as a base, or that insulation such as that sold by their competitor, Insul-Wool Insulation Corporation of Wichita, Kans., is inflammable or that its thermal conductivity compares unfavorably with that of rock wool or is higher than that of sawdust. The respondents further agree to discontinue claims that insulation having a paper base is susceptible to moisture or will settle when properly placed in the stud of a building. The respondents also stipulate that they will cease representing, through the use of excerpts from newspapers concerning a fire which occurred at the plant of a competitor, that the material which was burned was finished product, when in fact, the burned material was only raw material which had not been placed in the completed form in which it was customarily sold by the competitor in the usual course of trade.

Date for Depositing Abitibi Bonds

September 14 has been fixed as the final date for deposit of bonds of the Abitibi Power and Paper Company under the plan to terminate the company's receivership through judicial sale of its assets, according to an announcement by the bondholders' protective committee. More than 60 per cent of the bonds has been deposited. Sale of the property is scheduled to take place in Toronto on October 16. The committee has more than enough bond deposits to make the plan operative.

Under the conditions of sale outlined pursuant to the order of the Supreme Court of Ontario, the committee may use deposited bonds and matured coupons in lieu of cash in part payment for the properties. Non-depositing bondholders would be entitled only to their distributive share of the purchase price after allowance for their share of expenses and prior charges. The plan of procedure calls for purchase of all Abitibi assets on behalf of the depositing bondholders by a new company which would issue common stock at the rate of forty shares for each $1,000 deposited bond.

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending August 21, 1940

	High	Low	Last
A. P. W.	....	....	....
Armstrong Cork Co.	30½	29¼	30½
Celotex Corp.	6	5⅜	6
Celotex Corp., pf.	....	....	....
Certain-Teed Products Corp.	4⅛	3⅞	4⅛
Certain-Teed Products Corp., pf.	21¾	19½	21¾
Champion Paper & Fibre Co.	22½	22	22½
Champion Paper & Fibre Co., pf.	103	103	103
Congoleum-Nairn Co.	16⅛	15⅜	16⅛
Container Corp. of America	13⅛	12¾	13⅛
Continental-Diamond Fibre Co.	5½	5¼	5¼
Crown-Zellerbach Co.	14½	13⅝	14¼
Crown-Zellerbach Co., pf.	85½	85	85
Flintkote Co.	13¾	13	13¾
Robert Gair	2⅝	2½	2⅝
Robert Gair, pf.	12½	11⅝	12½
International Paper & Power	15¼	13⅞	15¼
International Paper & Power, pf.	57	53½	57
Johns-Manville Corp.	59½	57½	59½
Johns-Manville Corp., pf.	....	....	....
Kimberly Clark Corp.	....	....	....
MacAndrews & Forbes	29⅛	29⅛	29⅛
MacAndrews & Forbes, pf.	....	....	....
Masonite Corp.	26	25	25½
Mead Corp.	8⅝	8⅜	8⅜
Mead Corp., pf.	....	....	....
Paraffine Companies, Inc.	....	....	....
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	15⅜	15	15½
Rayonier, Inc., pf.	27½	26	27½
Ruberoid Co.	14	13¼	13¾
Scott Paper Co.	38	38	38
Scott Paper Co., pf.	113	113	113
Sutherland Paper Co.	....	....	....
Union Bag & Paper Corp.	12¼	11⅛	12⅛
United Paperboard Co.	....	....	....
U. S. Gypsum Co.	67½	63	67½
U. S. Gypsum Co., pf.	....	....	....

New York Curb Exchange

High, Low and Last for Week Ending August 21, 1940

	High	Low	Last
American Box Board Co.	4½	4½	4½
Brown Co., pf.	....	....	....
Great Northern Paper	41½	40½	40½
National Container Corp.	11	10¼	10⅞
St. Regis Paper Co.	3	2⅝	3
St. Regis Paper Co., pf.	63½	59¾	63½
Taggart Corp.	3¼	3¼	3¼

Kimberly-Clark Reports Financing

The Kimberly-Clark Corporation has reported to the Securities and Exchange Commission that on July 1 it sold privately to the Northwestern Mutual Life Insurance Company, at par, $2,000,000 of first mortgage serial 3½ per cent bonds, due in equal amounts in January 1 and July 1 in 1951 and 1952; and had borrowed $10,000,000 from bank, due $500,000 on January 1, 1941, and by equal semi-annual installments thereafter until July 1, 1950. The bank loans are secured by serial first mortgage bonds of the same amounts and maturities.

Interest on the bank loans ranges from 1½ per cent on the first maturity to 1¾ per cent on the second, 2½ per cent on the third and fourth, 2¾ per cent on the fifth, and 3 per cent on the sixth to tenth inclusive, and 3¼ per cent on all remaining maturities. Net proceeds from the $12,000,000 financing have been or are to be used to retire $9,000,000 outstanding notes payable and $3,000,000 for expansion of manufacturing facilities.

So long as any of the bonds are outstanding, the company agrees that it will not, without prior written consent of holders of 75 per cent of the outstanding bonds, reduce or retire any of its capital stock or make any liquidating distribution to stockholders or declare or pay any dividend, other than stock dividends, if the effect shall be to reduce capital and surplus below $35,000,000.

Also, the company will not reduce or retire any capital stock, make any liquidating distribution or pay or declare any dividends other than stock dividends, or make any advances to subsidiaries or affiliates, or purchase or invest in any stock of any company other than a company in which the corporation owns all or virtually all the outstanding shares, or make any capital expenditures other than those for maintenance of the property in good and efficient working order, if the consolidated net current assets are or would be reduced thereby below $4,500,000.

On December 31, capital and surplus of the corporation was $38,750,000, and net current assets $8,049,426.

Bathurst Power Earnings Up

MONTREAL, Que., August 19, 1940—R. L. Weldon president of the Bathurst Power and Paper Company, Bathurst, N. B., has issued a statement to the effect that for the six months ending June 30 last the company's volume of business set a new high level in the company's history, and that prospects for the balance of the year continue satisfactory.

Earnings for the six months ended June 30, 1940, after providing for depreciation and depletion and subject to audit and year-end adjustments but before making provision for federal and provincial income and excess profit taxes, are estimated to be $506,295. This compares with a deficit of $90,525 for the corresponding six months of 1939.

New current assets of the company, as at June 30, 1940, were $2,625,000, of which about $600,000 was cash, marketable securities and call loans.

Mr. Weldon added that the company is now nearing completion of its improvement program which, during the past four years, has entailed a capital expenditure of over $2,000,000.

M. & O. Co. Earns $1,120,787

Net sales of the Minnesota and Ontario Paper Company in the first six months of 1940 were $8,395,502, an increase of $1,724,879 over the first half of last year, and yielded net profits of $1,120,787, compared with $238,936, the trustees' twenty-fourth report to the United States district court in Minneapolis showed yesterday. The company has headquarters in Minneapolis and plants in International Falls, Fort Frances and Kenora.

The gain in sales was caused by increased demand for practically all the company's products, including newsprint, specialty papers, kraft paper, bags, sulphite pulp and insulite.

Pacific Mills Have Biggest Years

Pacific Mills Ltd., Vancouver, B. C., pulp and paper company with a plant at Ocean Falls, B. C.,

had its biggest year in a long time in the 12-month period ended April 30, when production jumped 65 per cent over the previous year and the profit was doubled, amounting to $920,924 compared with $457,-441 in the previous year, an increase of $463,483.

The profit is after deducting minority shareholders equity, a reduction of $269,522 for Canadian exchange adjustment, provision for depreciation, depletion and Dominion and provincial government income taxes in accordance with rates conforming with tax regulations prevailing at April 30. Enactment of war taxes since that time will reduce to some extent the present net profit.

J. A. Young, vice president and treasurer of the company, said better prices were received for the company's pulp and paper products during the year, due to the lack of competition from foreign countries. The fact that Swedish supplies have been shut out of North American markets by the war has done much to aid the company's earnings.

Pacific Mills is a subsidiary of the Crown Zellerbach Corporation, and is 93 per cent controlled by the American parent organization.

National Container Nets $360,754

The National Container Corporation for the June quarter reports net profit of $360,754, including the company's share in its affiliated company, equivalent to $1.09 each on 330,482 shares of common stock, compared with $36,871, or 11 cents a share, in the same quarter of 1939. Six months to June 30: Net profit, $562,872, equal to $1.70 a share on the common stock, compared with $87,946, or 26 cents a share, in the first six months of last year. Net sales for the first six months of this year amounted to $2,864,864, compared with $2,285,623 in the first six months of 1939.

Sabin Robbins Profits Up

The Sabin Robbins Paper Company reports net earnings of $135,936 for the fiscal year ended June 30, after deducting all charges and provisions for taxes. It compared with $49,084 earned in the preceding year. Income in the latest report equalled $51.62 a share on 2,082 shares of common stock outstanding, against $9.13 a share on 2,207 shares outstanding a year previous. The balance sheet of June 30, 1940, showed current assets of $1,534,289 and current liabilities of $606,415. A year earlier current assets were $1,410,586 and current liabilities amounted to $572,292.

Soundview Nets $1,345,053

The Soundview Pulp Company for the seven months to July 31, reports a net income of $1,345,053, equal to $2.59 a share on the common stock, compared with $164,987, or 19 cents a share in the first seven months of last year.

U. S. Gypsum Votes Dividend

The United States Gypsum Company has declared an extra payment of 50 cents a share on the common stock in addition to the usual quarterly disbursement of the same amount, both payable October 1 to stockholders of record September 14.

M. & O. Paper Plan Approved

CHICAGO, Ill., August 19, 1940—Federal Judge Gunnar H. Nordbye in Minneapolis has signed the order approving the trustees' amended plan of reorganization, dated July 16, 1940, of the Minnesota and Ontario Paper Company. The plan had been approved previously by the bondholders' committee and principal creditors and conformed to the conclusions of the Securities and Exchange Commission.

Judge Nordbye declared the plan fair, equitable and feasible, and found that it complied with the National Bankruptcy Act and with provisions of the Chandler act that were applicable. He said the company is insolvent and that there is nothing available for stockholders.

Under the plan Series A, B and C bondholders will receive $500 principal amount of new 5 per cent bonds and forty shares of new common stock for each $1,000 of old bonds held, while Series A holders will also receive $7.50 in cash and Series C holders $5 in cash. The proportion of the new common to be held by the bondholders of the old company will be 72.59 per cent.

All unsecured creditors will receive thirty shares of new common for each $1,000 of claims. Common stockholders of the old company receive nothing.

Judge Nordbye ordered that full information be mailed to creditors and stockholders not later than Sept. 10 and that acceptance should be filed on or before Oct. 25. He gave the bondholders' committee authority to accept the plan in behalf of all deposited bonds, except such bonds as may dissent before October 2.

Swedish Mills Restrict Production

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 22, 1940—Poor prospects of making shipments have caused most of the Swedish paper mills to restrict their production and several have closed down entirely, according to a report from the office of the American Commercial Attache, Stockholm. The home market consumes a good deal of paper, however, normally around 250,000 metric tons each year, and even though certain qualities have suffered from the crisis, others are being used more extensively as substitutes for imported goods.

In view of increased production costs, the northern kraft, sulphite, and greaseproof cartels raised their export prices by about 10 per cent.

Great Northern Nets $1.43

The Great Northern Paper Company and wholly-owned subsidiaries reported for the six months ended June 30, 1940, net profit of $1,426,155, equal to $1.43 a share. For quarter ended March 31, 1940, profit was $688,249, or 69 cents a share.

Zellerbach Extends $50 Price

The Crown Zellerbach Corporation has advised newsprint customers that the price of $50 a ton will be extended through the balance of the year and first quarter of 1941.

CONSTRUCTION NEWS

Tomahawk, Wis.—The Tomahawk Pulp Company, manufacturer of wood pulp, has completed plans for new addition, about 50 x 52 feet, to be used for storage and distribution. Bids have been completed and bids are being asked for erection. Construction is scheduled to begin early in September. L. A. DeGuere, Wisconsin Rapids, Wis., is consulting engineer.

Hempstead, Tex.—The Texas Gypsum Mining and Construction Company, Bankers' Mortgage Building, Houston, Tex., recently organized, has plans maturing for construction of proposed new fiber board mill, previously referred to in these columns, and will begin work on project at early date. It will consist of several one-story structures, to be equipped for an initial capacity of about 100 tons of finished fiber board products per day, with power house, pumping station and other mechanical departments, and is reported to cost close to $200,000, with equipment. Company also will develop and operate gypsum properties in immediate vicinity for raw material supply, with an estimated expenditure of about $100,000 for this branch of project. Charles A. Howe is president.

Chicago, Ill.—The Harrison Corrugated Box Company, Inc., recently organized, care of Myer M. Gilbert, 140 North Dearborn street, attorney, plans early operation of new local plant for the manufacture of corrugated boxes and containers. Incorporators of new company include Harry Basking and Herbert J. Goldenson.

Merrill, Wis.—Fibrecrete, Inc., recently organized to manufacture wood fiber insulating materials and building specialties, has established a new local plant, taking over a one-story industrial building. It is proposed to begin production at once. The plant will operate under a new process, invented by George Shackett, Milwaukee, Wis., who will be secretary of the new company.

Boston, Mass.—Tileston & Hollingsworth Company, 213 Congress street, manufacturer of writing, book and kindred paper stocks, has filed plans for extensions and improvements in mill at 862-64 River street, reported to cost over $15,000, in conjunction with other alterations at the plant, for which a previous building permit recently was issued. Work will be carried out at once.

Pensacola, Fla.—The Florida Pulp and Paper Company, Inc., Pensacola, which recently has begun erection of a new local mill, previously noted in these columns, has awarded contract to the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., for turbine-generator unit for installation in new power house to be built at the mill. Also, an award to the same company for motors, electric drives and miscellaneous auxiliary electrical equipment. An order for boiler units for the power plant has been placed with Babcock & Wilcox Company, 85 Liberty street, New York, N. Y.; and for a condenser to the Foster-Wheeler Corporation, 165 Broadway, New York. The Warren Steam Pump Company, Warren, Mass., will furnish pumping units, while vacuum pumps will be secured from the Nash Engineering Company, South Norwalk, Conn. New mill will represent an investment of about $3,000,000 and is scheduled to be ready for operation in 1941. The Rust Engineering Company, Clark Building, Pittsburgh, Pa., has the general erection contract. Hardy S. Ferguson & Co., 200 Fifth avenue, New York, are consulting engineers. James H. Allen is president.

Meadville, Pa.—The American Viscose Corporation, Delaware Trust Building, Wilmington, Del., manufacturer of viscose rayon products, has asked bids on general contract for new one-story addition to branch mill at Meadville, to be equipped primarily as a laboratory unit. It is reported to cost over $50,000, with equipment. Erection contract will be let soon. The Ballinger Company, 105 South Twelfth street, Philadelphia, Pa., is architect.

Wausau, Wis.—The Minnesota Mining and Manufacturing Company, Forest street, St. Paul, Minn., manufacturer of sandpaper and other abrasive paper stocks, has begun superstructure for new addition to raw material mill at First and Rosencranz streets, Wausau, to be one-story, totaling about 10,000 square feet of floor space. An award for structural steel framing has been made to the Wausau Iron Works, Wausau, and for metal work, to the Sheet Metal Contracting Company, Wausau. Erection will be carried out by company forces. Cost estimated about $40,000, with equipment. Toltz, King & Day, Inc., Pioneer Building, St. Paul, is architect.

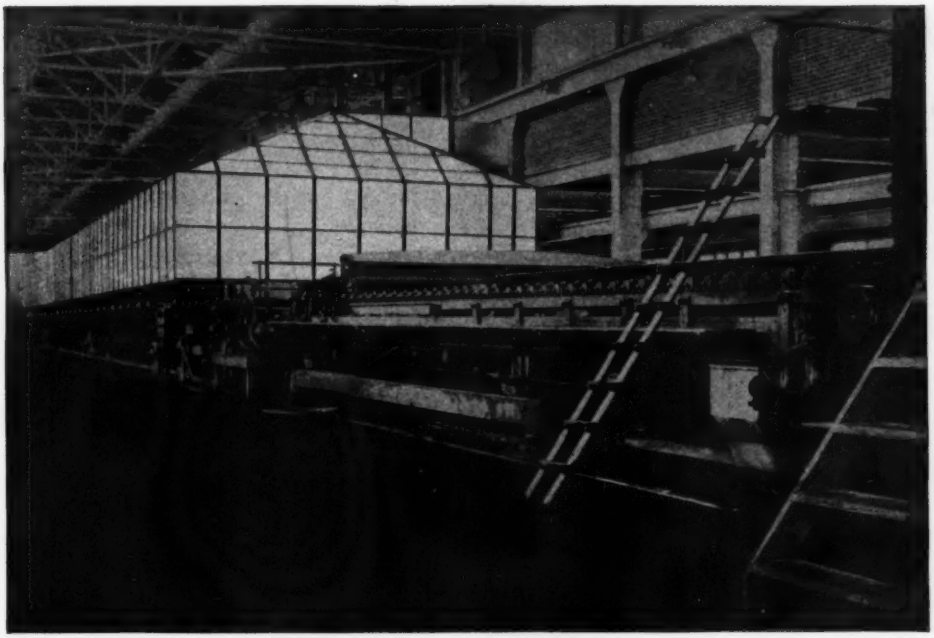
Campbellton, N. B.—The Restigouche Company, Ltd., manufacturer of bleached sulphite and rayon pulp, has preliminary plans under way for extensions and improvements in mill in the Atholville district, reported to cost over $75,000, with equipment. It is proposed to carry out work in the fall.

Baie Comeau, Que.—The Quebec North Shore Paper Company, 680 Sherbrooke street West, Montreal, Que., manufacturer of newsprint, plans extensions and improvements in mill at Baie Comeau, with installation of additional equipment. Program is reported to cost over $100,000, including machinery.

Thorold, Ont.—The Beaver Wood Fibre Company, Ltd., manufacturer of pulp board, newsprint, etc., has begun superstructure for new one-story addition to mill on Allanburg road, previously referred to in these columns, and completion is scheduled in the fall. It will be one-story, reported to cost about $75,000, with equipment. The R. Timm Construction Company, Ltd., 221 Burgar street, Welland, Ont., has the general erection contract.

Valdosta, Ga. — The Chamber of Commerce, Valdosta, is interested in a project to construct and operate a pulp and paper mill in the vicinity of the city and negotiations are said to be under way by a company, name temporarily withheld, for a suitable site for this purpose. M. F. Wendt, engineer, of Johnson & Wierk, 415 Lexington avenue, New York, N. Y., consulting engineers, has been retained to make a technical survey for the project, with sites on the Withlacoochee River, near city, now under con-

ANOTHER BELOIT MACHINE



THIS FINE PAPER MACHINE IS THE PRODUCT OF THE MODERN ENGINEERING AND MANUFACTURING FACILITIES WHICH MAKE BELOIT THE LEADER IN MEETING THE EXACTING DEMANDS OF THE PAPER INDUSTRY

THE BELOIT WAY BELOIT IRON WORKS PAPER MACH'Y BELOIT WIS. U.S.A. **IS THE MODERN WAY**

sideration. Proposed mill will consist of several units, to be equipped for an initial capacity of about 150 tons per day. Estimates of cost, also, are in progress.

Newton, N. J.—The Campbell Company, Hicks avenue, manufacturer of processed paper stocks, has begun erection of new two-story and basement mill on Merriam avenue, previously referred to in these columns, and completion is scheduled early in the fall. It is reported to cost about $80,000, with equipment. William I. Houghton, Newton, has the general erection contract.

Chandler, Que.—The Gaspesia Sulphite Company, Ltd., has plans under way for expansion and improvements in local sulphite pulp mill, with installation and improvements in local sulphite pulp mill, with installation of equipment for increased capacity. Cost is reported over $100,000, including equipment. Work is scheduled to be placed under way at early date.

New York, N. Y.—The Cellulose Packaging Corporation has been organized with capital of 50 shares of stock no par value, to manufacture and deal in cellulose stocks for wrapping and packaging service. New company is represented by Edward Gewitz, 122 East Forty-second street, New York, attorney.

Paper Trading Difficult in Britain

WASHINGTON, D. C., August 22, 1940—Difficulties of trading in paper and paper products increased daily following the rationing of paper and the issuance of new orders by the Paper Control, although it is apparent that traders are submitting to the restrictions with a fairly good grace, according to a report from the American Consulate, Manchester.

Paper manufacturers who are concerned regarding their future supply of raw material have been relieved to hear official statements that it is planned to augment supplies of wood pulp from Canada in the near future. They also hope that the Ministry of Shipping will find it possible to allocate transport for available supplies from Newfoundland.

Paper exporters are anxious to secure Dominion markets in which Germany has been a very successful trade competitor. It is believed that the Export Group formed to represent the paper and allied industries is investigating such opportunities, and the export of paper and paper goods is being encouraged.

Lessons in Arc Welding

Under the title, "Lessons in Arc Welding," the Lincoln Electric Company, 12818 Coit Road, Cleveland, Ohio, has published a book of 136 pages covering the fundamentals of the subject. The volume is cloth bound and the price is 50 cents a copy, postpaid.

This book is a practical presentment of electric welding and should be useful for beginners and also to experienced welders. The text comprises 51 lessons, based upon the experience of Arthur Madson, instructor at the Lincoln Arc Welding School. The contents include methods of procedure, nineteen lessons on the use of unshielded arc electrodes and nine lessons on shielded arc electrodes.

Instructions in the use of electrodes for particular joints and metals cover fifteen lessons and eight lessons provide detailed instructions on hard facing. Drawings and photographs supplement the text and questions on each lesson are included.

NO INCREASE IN PRICE EXPECTED

(Continued from page 7)

The following salaries per working month of 26 days are to be paid, the order rules:

Truck and tractor drivers and engine and motor operators $60; stable hands $55; carters and portage men $55, plus a special monthly allowance of $17 for horse and harness and of $20 for horse, harness and vehicle.

A maximum working week of 60 hours is established for all men actually employed in forestry tasks in the woods and they are to receive, the order rules, time and a quarter for ordinary overtime and time and a half for necessary Sunday work.

Carpenters, mechanics, dynamiters, forge workers and sawmen must be paid $60 per calendar month while general utility men and guardians or janitors must receive $55 for the same period.

Cooks must be paid from $80 to $52 per calendar month according to the number of persons eating in the camps. Assistant cooks in hospitalization camps of 50 or more people are entitled to $60 and in ordinary camps to $50.

The order grants special concessions to all employers whose annual exploitation of timber is not in excess of 200,000 cubic feet of saw wood or 2,400 cords of firewood.

Such employers may have up to 30 per cent of their employees catalogued as apprentices, crippled workers and men over 60 years old, all of whom are entitled to $35 per month. The government, at its discretion, can accord such employment certain favors and may reduce their stumpage dues sufficiently to allow them to pay the wages specified by the order.

New Literature

V-belt drive equipment is described in Texrope drive bulletin No. B-6951-A, issued by the Allis-Chalmers Manufacturing Company, Milwaukee, Wis. The publication contains useful data on types and sizes of V-belt drive equipment, estimating costs, horsepower ratings, etc. Dimensions and speed range tables for eleven sizes of vari-pitch speed changes up to 75 h.p. are included.

Benefits of modern instrumentation, is the subject of a folder issued by The Foxboro Company, Foxboro, Mass. A variety of industries using scientific control of operations are cited, including a coated paper mill.

The *Labor Saver,* Volume 186, issued by the Stephens-Adamson Manufacturing Company, Aurora, Ill., describes several new installations of the company's line of conveying material handling and screening equipment.

Controlling liquid level, is the subject of Publication 2939, issued by the Cochrane Corporation, 17th street and Allegheny avenue, Philadelphia, Pa. It discusses five different methods of control, with advantages, operations and applications of the Cochrane liquid level controllers. Dimensions and list prices are given.

Multiple retort stoker details are given in a new catalogue No. MR-4, issued by the Combustion Engineering Company, 200 Madison avenue, New York. The principal features of the company's type MRO stoker, operation diagrams and typical installations are included.

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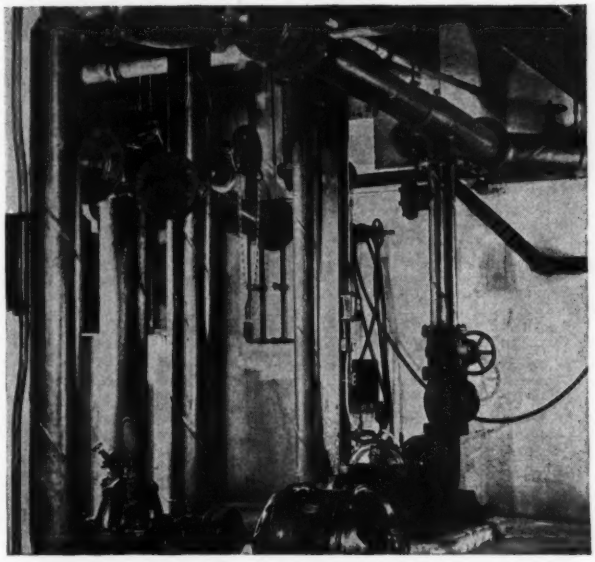

• Many paper mills have found they can cut installation and maintenance costs by using ARMCO Spiral Welded Pipe. It is not unusual for them to save as much as 30 per cent on the cost of a single job. Here is how they do it:

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PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

Henry J. Berger
EDITOR

Vol. 111 August 22, 1940 No. 8

COMING EVENTS IN PAPER INDUSTRY

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Fall Meeting, Olympic Hotel, Seattle, Wash., August 20-23.

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—Second Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

NATIONAL SAFETY COUNCIL, PAPER AND PULP SECTION, Annual Meeting, Stevens Hotel, Chicago, Ill. October 7-11.

NATIONAL PAPER TRADE ASSOCIATION, annual Fall Meeting, Stevens Hotel, Chicago, Ill. September 23-25.

TRENDS AND EARNINGS

Increasing demand for paper and pulp through expanding consumption of standard kinds of paper and also through new uses for raw paper and for wood pulp, has long formed the basic advantage of the industry and the primary reason for its steady growth. In an interesting and informative discussion of trends and earnings in numbers 4, 5 and 6 of the *Monthly Review* issued by the American Paper and Pulp Association, comment is made that, "In the past, expansion in the paper and pulp industry has been typical of those which occur periodically in natural resource industries. The petroleum, coal, iron and other industries have experienced similar expansions. Such movements occur as technological developments, economic developments, or new uses open hitherto unusable raw materials to competitive use in production.

"Thus, the paper and paper industry experienced newsprint paper expansion in Canada when the removal of tariff barriers opened United States markets and rendered Canadian production sites economically feasible. It experienced the kraft paper capacity expansion in the South as technological developments opened a vast field of low cost pulping species and economically located production sites. These are only two examples, but the entire history of pulp and paper has been similar. Such developments do not and cannot wait upon normal increase of paper and pulp consumption. Capital must take immediate advantage of the new productive areas and sites and force an increase in consumption through low costs and lowered prices. But the process of forcing consumption increases is slow and periods between expansions in the past have been too short to permit of profitable operation."

In surveying the trend of production, capacity, value and operating profits, the comment is made that, "Assuming that the trend of operating profits of 55 paper companies, representing an average total of $400,000,000 of invested capital, is representative of the industry it is possible to evaluate some of the chief economic trends of the paper industry... Paper production in 1939 exceeded that of 1927 by 34 per cent while capacity increased by 30 per cent. The margin of excess capacity remained practically constant. . . Total operating profits in 1939 were some 15 per cent below those of 1927, chiefly due to the 25 per cent contraction of paper values which even the 34 per cent increased production and reduced costs failed to offset. Only in one year, 1937, did aggregate operating profits reach those of pre-depression years, and in that year, operating profit per ton stood nearly 20 per cent below that of 1929. Although industry in general can hardly expect to approximate 1929 profits, yet paper industry returns in that prosperous year were modest by comparison with other industries and paper sales have since increased by leaps and bounds. For the 55 companies surveyed, operating profits in 1929 amounted to some 15 per cent on invested capital. Out of this was paid the general and selling expense, fixed interest expense and dividends."

In showing the distribution of the average net sales dollar of 77 paper and pulp companies the *Review* points out that manufacturing expenses, including raw material costs, accounted for 79 per cent of the net sales dollar, with 12 cents going to general, selling and miscellaneous expenses, while taxes accounted for four cents, leaving five cents for dividends and addition to surplus. Of the five cents, three cents went to dividend payments and two cents to the earned surplus account.

A comparison of profits of companies by products, showed net profits of 9 book paper mills, to net sales were 9 per cent; writing paper mills, 15 per cent; wrapping paper mills, 7 per cent; paper board mills, 12 per cent and all other mills 8 per cent. In comparing earnings of the paper and pulp industry with major industries the *Review* points out that net profit on sales of paper and pulp companies, 1937-1939, was 5.1 per cent; cotton goods, −2.9 per cent; rubber products, 5.3 per cent; machinery, 6.8 per cent; chemicals, 8.5 per cent and automobiles, 9.7 per cent. Figures represent net profits before dividends.

In examining the earnings of a group of representative paper and pulp companies for the first half of 1940, substantial gains are noted over the final half of 1939. This is particularly true in the newsprint field. Nineteen newsprint mills had profits in the first half of 1940 amounting to $24,458,412.

which is an increase of 44.5 per cent over $16,932,747 in the second half and of 237 per cent over $7,255,-186 in the first half of 1939. Profits in 1938 were $5,004,345 in the first half of the year and $4,644,241 in the second half.

Profits of fifty companies in the paper and pulp, chemical, glass, metal and wood container fields were given in a recent survey at $107,519,639 for the first half of 1940, compared with profits of $66,218,251 for the first half of 1939 and with $109,429,708 for the second half of 1939. Among the two pulp companies included, their profits for the first 1940 half year was $2,680,559, compared with $1,427,399 for the first half of 1939 and with $1,226,020 for the second half of 1939. Six general paper companies had profits of $3,066,277 for the first half of 1940, compared with profits of $1,681,936 for the first half of 1939 and with $3,066,277 for the second half of 1939. Seven paper container companies reported profits of $3,962,936 for the first half of 1940, compared with $1,275,273 for the first half of 1939 and with $2,902,617 for the second half of 1939. Profits of 19 paper companies for the first half of 1940 totaled $24,458,418, compared with $7,255,-186 for the first half of 1939 and with $16,932,747 for the second half of 1939.

Scientific Price Management

"Scientific Price Management" by Allen W. Rucker, published by The Eddy-Rucker-Nickels Company, Harvard square, Cambridge, Mass., at $5 a copy, may be called a working manual for executives concerned with making decisions involving prices or costs. The text is a practical presentment of the subject, rather than a theoretical discussion and discusses fifteen different types of problems.

In this manual the first phase of price management is covered. This phase embraces pricing moves involving the decision of concessions in price without reduction in direct costs, and decisions concerned with increasing direct costs without change in the regular price.

The case studies range from simple studies of problems, such as advertising allowances, sales bonus, etc., to problems of production, retail store sales and the important problem of price discounts.

The determination of volume increases is provided for by six calculator charts, by which the minimum required increase in unit sales may be read directly from the charts, without computation.

Newton to Buy Paper Baler

NEWTON, Mass., August 19, 1940—An income of at least $30,000 a year was promised the city of Newton from the sale of waste paper as the board of aldermen Wednesday night appropriated $4000 for the purchase of a paper-baling machine.

Instead of burning all paper collected by the street department from homes, the collections will be sorted, and kraft paper, including cardboard, heavy wrapping paper and corrugated material, will be baled. The remainder will be burned.

Production Ratio Report

These statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES[1]

Months	1940	1939	1938	1937	1936	1935	1934
January	90.2%	77.5%	63.9%	90.3%	76.1%	65.8%	.....
February	86.2%	81.7%	68.7%	90.1%	77.9%	70.0%	.....
March	83.9%	84.0%	69.6%	90.3%	76.0%	70.5%	.....
April	86.3%	82.9%	68.3%	92.1%	82.3%	70.0%	.....
May	91.7%	80.2%	69.0%	90.6%	81.6%	69.4%	.....
June	94.2%	79.7%	66.0%	87.3%	80.7%	72.3%	.....
July	87.0%	75.2%	72.0%	81.8%	77.3%	64.9%	.....
August	.....	82.9%	77.2%	82.9%	81.5%	70.9%	.....
September	.....	88.7%	76.3%	78.6%	80.5%	71.9%	58.2%
October	.....	96.6%	82.5%	73.5%	87.6%	75.6%	64.7%
November	.....	97.2%	79.6%	61.9%	88.0%	75.3%	61.7%
December	.....	91.1%	74.4%	54.5%	85.9%	71.2%	59.6%
Year Average	.....	84.9%	72.3%	80.6%	81.3%	70.5%	.....
First 32 weeks	88.7%	80.4%	68.6%	88.5%	78.9%	69.0%	.....

COMPARATIVE WEEKLY SUMMARIES[1]

CURRENT WEEKS, 1940		CORRESPONDING WEEKS, 1939	
July 6 (Holiday week)	70.9%	July 8	56.3%
July 13	92.6%	July 15	81.8%
July 20	93.1%	July 22	81.1%
July 27	89.8%	July 29	81.7%
August 3	88.8%	August 5	80.5%
*August 10	91.1%	August 12	82.9%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting—Current Weeks					
Ratio Limits	July 6, 1940	July 13, 1940	July 20, 1940	July 27, 1940	Aug. 3, 1940	Aug. 10, 1940
0% to 50%	109	34	39	47	43	38
51% to 100%	189	262	256	247	235	189
Total Mills Reporting	298	296	295	294	278	227

PAPERBOARD OPERATING RATIOS

Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1936	62%	67%	67%	70%	69%	70%	69%
1937	80%	86%	86%	88%	85%	77%	66%
1938	54%	60%	61%	57%	58%	56%	57%
1939	60%	67%	71%	69%	64%	67%	63%
1940	71%	70%	69%	70%	76%	79%	72%

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1936	75%	78%	82%	80%	74%	72%
1937	74%	69%	65%	55%	45%	73%
1938	66%	66%	70%	65%	59%	61%
1939	72%	74%	84%	81%	71%	70%
1940	....	....	....	....	....	....

Week end. July 6, 1940—60%
Week end. July 13, 1940—72%
Week end. July 20, 1940—77%
Week end. July 27, 1940—74%
Week end. Aug. 3, 1940—74%
Week end. Aug. 10, 1940—74%

[1] Production-capacity ratios are based upon six-day capacity ratings which are adjusted periodically to correspond with the ratings reported by individual companies. Ratios are subject to revision until all reports are received.
*Preliminary figure.

Government Paper Bids

WASHINGTON, D. C., August 21, 1940—Government Printing Office has received the following bids for 28,000 pounds (100,000 sheets) of 22½ x 28½, 50 per cent rag, white index paper: Barton, Duer & Koch Paper Company, 13.88 cents; R. P. Andrews Paper Company, 11.13 cents; Stanford Paper Company, 16.5 cents; Old Dominion Paper Company, 12.47 cents; Mudge Paper Company, 11.08 cents; Paper Corp. of U. S., 12.25 cents; and Mathers-Lamm Paper Company, 14.5 cents.

For 22,608 pounds (314,000 sheets) of 34 x 44 yellow sulphite manifold paper: Whitaker Paper Company, 10.8 cents; Mudge Paper Company, 10.92 cents; Import Paper Company, 9.15 cents; Old Dominion Paper Company, 14.69 cents; Graham Paper Company, 9 cents; Marquette Paper Company, 8.69 cents; R. P. Andrews Paper Company, 11 cents; Barton, Duer & Koch Paper Company, 10.8 cents; and Stanford Paper Company, 12.5 cents.

They Started Something!

WHEN Oersted watched a compass needle turning as an electric current passed through a near-by wire, he laid the foundations for the far-flung electrical industry of today. His discovery of electromagnetism paved the way for the research of Ampere, Davy, Faraday—research that freed electricity from the bondage of the voltaic cell, that led to the discovery of ways to convert mechanical energy into electrical, that made motive power available to industry wherever it was needed. Few discoveries have had such far-reaching results. Today there is scarcely an industrial process, or a phase of human activity, in which electricity does not play a vital part. A new era began for every industry when Oersted discovered electromagnetism.

When EBG engineers first made Liquid Chlorine commercially available in America, their achievement also was destined to have far-reaching effects on human welfare and industrial progress. To hundreds of communities, EBG Liquid Chlorine brought a new measure of safety from water-borne diseases. Today it plays an essential part in assuring the purity of water supplies, and its use in the sterilization of sewage is aiding in the fight to control pollution of lakes, rivers, and streams. And for the manufacturers of paper and textiles, EBG Liquid Chlorine opened the way for new and more economical bleaching methods, and made possible new standards of quality.

The first cylinder of Liquid Chlorine made by EBG in 1909.

First to produce Liquid Chlorine in America, EBG engineers have the advantage of *extra* years of experience. Put that experience to work for you—use EBG Liquid Chlorine.

EBG Liquid Chlorine

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Plant: Niagara Falls, N. Y.

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Moisture in Paper

Proposed Revision of TAPPI Standard T 412 m-35

Scope

This method applies to all papers and paper products except those containing materials other than water which are volatile at 100-105 deg. C.

Apparatus

The special apparatus required for this test is an airtight container in which the test specimen is dried and weighed. For the minimum-sized specimen designated, a weighing bottle approximately 65 mm. (2½ inches) in height and 45 mm. (1¾ inches) in diameter is suitable. For the larger specimens a proportionately larger, lightweight, airtight metal can should be used, preferably containing a removable lightweight wire-mesh basket.

The oven used to dry the paper should be equipped with means for ensuring adequate temperature control and air circulation and preferably equipped with means of drying the air entering the oven.

Test Specimen

When the amount of moisture is determined to compute the results of chemical tests of paper on a moisture-free basis, the test specimens shall weigh not less than one and preferably not less than two grams each and when weighed shall be in moisture equilibrium with the specimens being analyzed. When moisture is determined to compute the amount of moisture in a delivery of paper, the test specimens shall weigh not less than 50 grams each, and they shall be obtained in accordance with TAPPI Standard T 400 m-36, Sampling Paper for Testing. *In sampling a delivery for moisture content extreme care must be taken to avoid change in moisture content during sampling.* Handle the specimen with clean, dry rubber gloves, transfer it to the container as soon as withdrawn and close the container immediately. If a delay of over a second or two in transferring the specimen to the container is unavoidable, keep the specimen covered on both sides with several adjacent layers of the paper from which it was withdrawn until ready to place it in the container. Unless the specimen is later to be spread out in the oven, avoid stuffing the container tightly.

Procedure

After the specimen has been placed in a weighed container, weigh it in the closed container to obtain the moist gross weight of the paper.

(1) For large samples, unless the container has a removable basket, take them from the container in which they were weighed, spread them in a basket or tray which will permit free circulation of air around them, and place them, as well as the original containers, in the oven. Heat for about two hours, replace the specimens in the original container and close it, doing this if possible without removing the specimens from the oven. Let the closed container and contents cool at room temperature, and weigh.

(2) For small samples, without removing them from the weighing bottles, remove the stoppers, heat for one hour, close the bottles in the oven, cool to room temperature in a desiccator, and weigh. Remove the stopper momentarily just before weighing, to adjust any change in air pressure.

(3) Dry the specimens in either case at 100-105 deg. C. Repeat the periodical drying and weighing until the difference in weight between two successive weighings is not more than 0.1 per cent of the weight of the specimen. For two-gram samples, all weighings shall be made to an accuracy of one mg.; for other samples, at least to an accuracy of 1/2000 of the original weight of the sample.

Report

The moisture shall be reported as the percentage loss in the original weight of the paper to the nearest 0.1.

Reproducibility of Results

The percentage results of duplicate determinations of moisture should agree to within 0.2.

Correction in TAPPI Standard T 406 m-39, Reducible Sulphur in Paper

Due to some confusion about the strength of the sodium thiosulphate solution used in this standard, the paragraph numbered (3) under Reagent has been rewritten as follows:

"Standard sodium thiosulphate solution, freshly prepared. Solutions over 2 days old should not be used. Use recently boiled distilled water, cooled to about 20 deg. C., for preparing the solution. Dissolve 0.097 gram of C.P. fresh, clean crystals of $Na_2S_2O_3 \cdot 5H_2O$ in a little water in a 100-cc. volumetric flask, dilute to the mark and mix thoroughly; then dilute 10 cc. of this solution to 1 liter and mix thoroughly. 1 cc. of this diluted solution contains the equivalent of 0.0000025 gram of sulphur."

In the fourth line from the bottom of the first page change "0.001 per cent" to "standard".

Wetting Agents, Their Structure, Characteristics, and Uses*

By C. A. Sluhan[1]

Abstract

The author deals with the general subject of surface active chemicals as applied to wetting, dispersing, and detergency. It is pointed out that these operations are distinct and separate, although detergency does involve wetting and dispersing action.

It is shown that wetting agents differ in molecular configuration from detergent type products or dispersing agents. The structure of the molecule with its attendant effect on wetting power, solubility, and foaming is also discussed.

Comparison is made of anion and cation surface active chemicals and a number of applications in various industries is cited. The importance of selecting the proper type of surface active chemical for applications of wetting, dispersing, or detergency is emphasized.

In dealing with the subject of wetting agents, it would perhaps be best to first review the natural phenomenon known as surface tension, which makes wetting agents so necessary and valuable to industry. You are aware that a stream of a liquid will break into small drops, forming almost perfect spheres. A sphere, of course, has the least surface area per unit of volume, and the reason the liquid forms into drops is that the molecules of the liquid pull upon one another in such a manner as to create a tension acting parallel to the surface, and such being the case, the liquid will tend to assume a shape with the least surface area. The greater the attraction of these molecules for one another, the greater the surface tension, and the greater will be the amount of work necessary in extending the surface. This amount of work is specific for each liquid at a definite temperature. Numerically, it is expressed as dynes per centimeter, which is equivalent to saying that it is the work in ergs required to increase the surface area by one square centimeter. Perhaps it will be best to show what this surface tension will actually do.

If we take a toy battleship which has a lower structure of fine wire screen and place it on water, it will float because of the high surface tension of the water and the high angle of contact between the water and the wire. However, when we add a wetting agent, it sinks immediately, because the surface tension of the water is reduced and the wire becomes wet *(1)*.

Surface tension deals with the relation of liquids to air or gases. However, wetting agents are generally used in water which in turn is used in connection with other liquids or solids. The surface tension at the interface between two immiscible liquids, or a liquid and a solid is known as "interfacial tension." Wetting is the phenomenon of a liquid and a solid coming into contact so as to form a liquid-solid interface. Wetting is generally considered complete when the contact angle between the two surfaces is zero. Generally speaking, the lower the interfacial tension, the more rapid is the wetting.

Ethyl alcohol is an excellent wetting and penetrating agent, however, large quantities must be used to obtain the desired results *(2)*, but one of the advantages of the true wetting agents is that only relatively small quantities are necessary as shown in Table I.

TABLE I.—25 DEG. C.

Aerosol OT-100%	Surface Tension	Ethyl Alcohol *(2)*	Surface Tension
%	dynes/cm.	%	dynes/cm.
1.0	26.8	75.68	25.0
0.5	27.3	61.10	26.7
0.1	28.0	43.64	28.5
0.05	32.0	29.67	33.1
0.01	40.5	15.93	41.8
0.005	43.7	5.94	54.0
0.001	49.4	2.33	60.8

From these data, it can readily be seen that exceedingly high concentrations of alcohol must be used in order to obtain a low surface tension, and thus to obtain satisfactory wetting.

In what way then, do wetting agents work in order to achieve such outstanding results?

In order to understand their behavior, it would be well for us to examine their chemical nature. Broadly speaking, there are two extreme types of chemical compounds, polar and nonpolar, whose properties *(3)* are shown in Table II.

TABLE II

Polar-Nonpolar Compounds

Polar (Salt)	Nonpolar (Nujol)
Ionized	Nonionized
High Dielectric Constant	Low Dielectric Constant
High Melting Point	Low Melting Point
Soluble in Water	Insoluble in Water
Insoluble in Organic Solvents	Soluble in Organic Solvents
High Boiling Point	Low Boiling Point
Melt Conducts Electricity	Melt does not Conduct Electricity

Structure of Surface Active Materials

Wetting agents are in the class of heteropolar or polar-nonpolar compounds and have properties intermediate between these two types. They are composed of both polar and nonpolar groups. Some approach the polar and others the nonpolar compounds, depending upon the "balance" or ratio of the polar to the nonpolar portions. Langmuir's *(4)* work shows us that the polar portion has the tendency to direct the molecule into the water, whereas the oil-soluble or nonpolar portion will be attracted to any surfaces with which their water solution comes into contact. In ordinary solution, with air or gas as the contacting surface, the oil-soluble portion is directed against the air, whereas the polar or water-soluble portion is directed towards the water. When a wetting agent is added to water, *a new surface is formed* which is oil-like in character, having a much lower surface tension than plain water. The popular definition of a wetting agent therefore is a material, which

* Presented at the meeting of the Delaware Valley Section of the Technical Association of the Pulp and Paper Industry, Engineers Club, Philadelphia, Pa., May 10, 1940.

[1] American Cyanamid & Chemical Corporation, 30 Rockefeller Plaza, New York, N. Y.

when added to water in small amounts will cause considerable reduction in surface tension.

To show the effect of adding a wetting agent to water, dip a piece of paraffin paper in a water solution of a dyestuff, the dyestuff being used to identify the position of the water after withdrawing the paper. You will note that in withdrawing the paper, the water runs off readily. Now add a wetting agent to the water, immerse the paper, and upon withdrawing it, note that the paper is readily wet by the solution. What actually happens is that the oil-soluble portion of the wetting agent molecule is attracted to the paraffin, because the paraffin is non-polar in character, and the polar or water soluble group of this same molecule pulls the water along with it.

Wetting agents as a whole will reduce the surface tension of water markedly when used in low concentrations, but relatively few materials can raise the surface tension of water. Even in those cases, the surface tension of water cannot be raised to any great extent, and when such is possible, large amounts of the materials are necessary. Usually such materials are inorganic in nature, such as salts, acids, and the like.

Wetting vs. Dispersing

There seems to be considerable confusion as regards the terms "wetting" and "dispersing". As stated previously, a *wetting* agent is a material which will reduce the surface tension of water and lower the interfacial tension between the water and another surface, so as to forn. a solid-liquid, or liquid-liquid, interface. On the other hand, a true *dispersing* agent usually has little effect on the surface tension of water. This is shown by the following experiment.

If we place sulphur on ordinary water, it floats; but if a wetting agent is added to the surface of the water, you note that the sulphur sinks immediately. In another beaker, place sulphur on water and to it add a typical dispersing agent. You will note that the sulphur does not sink, because the interfacial tension between the sulphur and the water is not sufficiently reduced. In a further experiment, add carbon-black to ordinary water. You will note that it is wet fairly readily, but that it soon settles out. Add carbon-black to a dilute solution of a wetting agent, and you will note that it also wets readily, but that most of it soon settles in fairly large particles. Now add carbon-black to water and after it is wet, add a dispersing agent. You will notice at once that the mixture is considerably darker than the other mixtures, which results from the fact that the carbon-black particles are much smaller and remain in suspension.

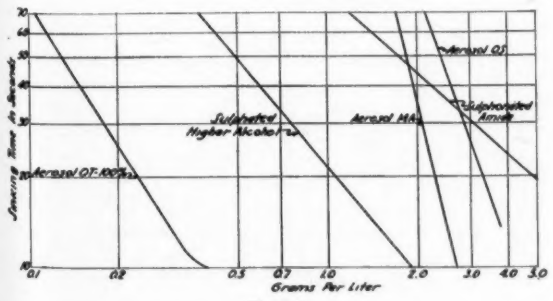


FIG. 1

An aqueous dispersing agent is a material which promotes the separation or deflocculation of particles, which is accomplished by overcoming the adhesive forces between the individual particles. From these experiments, it is seen that a wetting agent is not necessarily a dispersing agent, although some wetting agents do have some dispersing power as a secondary nature. While there are many products having wetting properties, there are relatively few true dispersing agents. Then too, the action of dispersing agents is specific, their effectiveness depending upon the particular system. Dispersing agents may be inorganic in nature or complex polar-nonpolar compounds.

Wetting Power and Molecular Configuration

"Wetting power" is a relative term. Since this is the case, it is necessary to measure the effectiveness of a given material in terms of what it will do in comparison to other materials. In the textile industry, the most widely used test method is that of Draves and Clarkson. It consists of measuring the time necessary for a 5-gram skein of unboiled two-ply cotton yarn to sink in a definite concentration of a wetting agent in water at a definite temperature. Tests are made at various concentrations of the wetting agent; the data are then recorded on log log paper as shown in Fig. 1.

From the data one can determine the concentration of wetting agents necessary to give a definite sinking time. If two materials, when used in the same concentration, give the same sinking time, they are of equal wetting power at that particular concentration. From their cost, one can determine their comparative money value.

The Draves and Clarkson sinking time method *(5)* is as follows. A 500-cc. graduate is filled with water, and another is filled with a dilute solution of a wetting agent. Cut the skein of yarn and in the middle of it fasten a 3-gram hook, which in turn is fastened by means of a piece of thread ¾ inch long to a 40-gram weight. When the skein is immersed in the water, the thread between the hook and the weight remains taut by virtue of the fact that the air in the fiber is not displaced by the water, due to the fact that the water has a high surface tension and will not wet the fiber which has a natural wax coating. If we place a like skein in the solution of the wetting agent, we will see that within a few seconds, the wetting agent solution wets the fiber, displacing the air, and the skein sinks.

We previously showed that wetting agents are composed of two portions, one, water-like in nature, and one oil-like in nature. The characteristics of the material, and therefore the suitability for a particular application will depend upon the "balance" of the two portions and their respective positions in the molecule. For example, the wetting power of various types of such compounds is shown in Fig. 1.

From this figure it is readily seen that the Aerosol OT-100% is by far the most powerful wetting agent of the group. In other words, considerably less of the material is required to give a definite sinking time than is required of the other materials examined. The structure of these respective materials is shown in Fig. 2.

We note that in the case of Aerosol-OT, which is an ester of a sulphonated dicarboxylic acid, the polar or water-solubilizing group is approximately in the

middle of a branched train. In the case of the sulphated higher alcohol and the sulphonated amide, the polar or water-soluble group is at the end of a long nonpolar group. When these materials are dissolved in water, a definite number of molecules will be required to completely cover the surface of the water and also the interface between the solution and another surface. In the case of the sulphated higher alcohols and the sulphonated amides, the molecules can pack very closely together and a relatively large number will be required, because the molecules are relatively long, but small in diameter. In the case, however, of the ester of the sulphonated dicarboxylic acid, only a relatively few number of molecules will be required to cover the surface or an interface, inasmuch as the molecule when oriented, is relatively short, but considerably greater in area. This difference in molecular structure has an important bearing on the relative efficiency of these materials as detergents, as we shall see later.

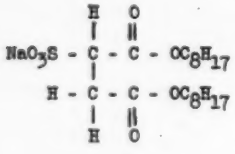
Solubility and Molecular Structure

In addition to wetting power, the solubility of wetting agents is likewise considerably influenced by the structure and balance of the molecule (*see* Fig. 3).

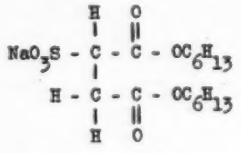
In the case of the dilauryl ester of the sulphonated dibasic acid, the product is practically insoluble at room temperature. However, as we reduce the length of the polar chains, the solubility is increased and we note that the dioctyl ester is soluble to the extent of approximately 1.5% and that as we reduce the length of the polar chain still further, the solubility is further increased, although not so markedly. However, in doing so, we adversely affect the wetting power in ordinary water. For example, the dibutyl ester of the sulphonated dicarboxylic acid has no wetting power in ordinary water at a concentration of 1%.

On the other hand, a considerable difference in wetting characteristics is noted in Fig. 4 when these materials are used in solutions of electrolytes.

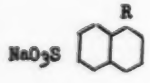
This shows the effect of a salt solution upon the dioctyl ester. Notice that relatively low concentrations of salt decrease the wetting power of this material. However, when we examine the dihexyl ester in sodium chloride solution, we note that its wetting



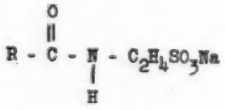
Aerosol OT



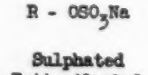
Aerosol MA



Aerosol OS

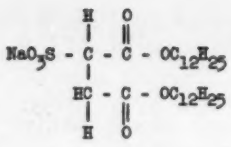


Sulphonated Amide

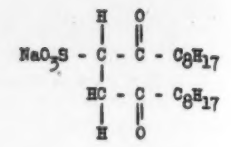


Sulphated Fatty Alcohol

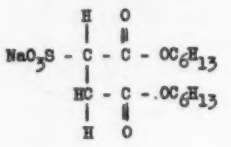
FIG. 2



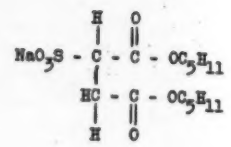
Insoluble



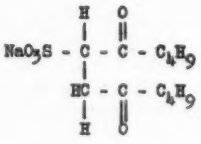
1.5%



33.4%



38.14%



Over 40%

FIG. 3
Relation of "Balance" to Solubility (21 deg. C.)

power in up to 5% salt is considerably greater than its wetting power in ordinary water as shown in Fig. 5.

In the case of the dibutyl ester, which you will recall has no wetting power in ordinary water at 1% concentrations, considerable wetting power is exhibited in 20% sodium sulphate solution, and in fact, very closely approximates that of the dihexyl ester when used in ordinary water as shown in Fig. 6.

If on the other hand, the concentration of the electrolyte is too high, the wetting agent will be actually

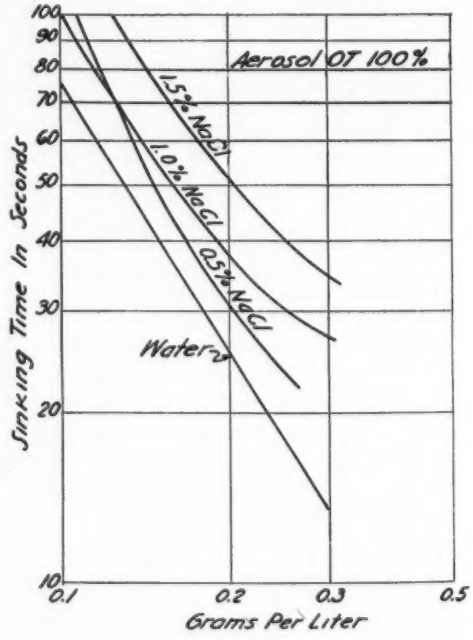


FIG. 4

salted out of solution. The quantity of electrolyte necessary to cause salting out depends upon the electrolyte itself and also upon the particular wetting agent and upon its concentration in the solution.

In view of the foregoing, we can state that generally, as the molecular weight of the nonpolar portion is increased, the solubility in water and in electrolyte solutions is decreased. As the molecular weight of the nonpolar portion is increased, and providing the material has sufficient solubility, the wetting power is usually greater in electrolyte solutions than in pure water. It is thus apparent that wetting agents must be very carefully balanced and that the proper one must be selected for each particular application.

Foaming

Another property of wetting agents and surface active compounds which is influenced by structure is that of foaming. The fundamental condition for the formation of a froth requires that there be a difference of concentration of the dissolved substance in the surface layer as compared to the concentration of the substance in the bulk of the solution. Figure 7 illustrates a cross-section of a bubble *(6)*.

R denotes the oil-soluble portion and *X* denotes the polar or water-solubilizing group. Such a film is relatively stable, since it is elastic. If the tension in the film is increased by increasing the area, the concentration of the wetting agent, or surface active compounds, is reduced and the surface tension is increased, which balances the increased tension. If the area is reduced, reducing the tension in the film, the wetting agent concentration is increased and the surface tension will be decreased to balance the reduced tension. If a material is too soluble, or too insoluble, it will not produce a copious foam. A 0.2% concentration of the dioctyl ester of sulphonated dicarboxylic acid forms more foam and a more stable foam than a 0.2% concentration of the dibutyl ester of sulphonated dicarboxylic acid. Likewise, a 0.2% solution of a sulphated higher alcohol, produces more of a froth and a more stable froth than either of the other two materials. This is in line with our experience that in general, detergent-type surface active products are better foamers than wetting agent types.

Detergency

Still another property considerably affected by

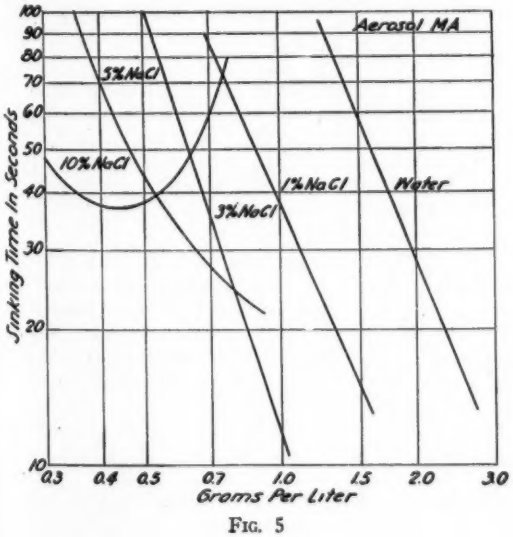


FIG. 5

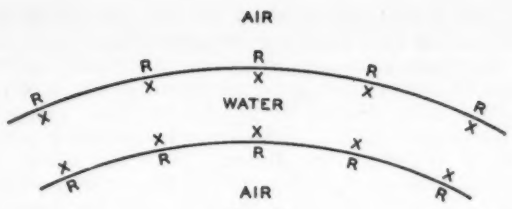


FIG. 7
Foam Formation

structure of polar-nonpolar or surface active compounds is that of detergency. In studying soap as well as synthetic organic detergents, we note that they are possessed of one common similarity. That is, a straight chain hydrocarbon on the end of which is located the polar or water-solubilizing group. This series of compounds differs from the more truly wetting agent types in that the latter have the polar group located nearer the middle of the chain. Typical of the synthetic organic detergents are such products as the sulphated higher alcohols, sulphonated amides, sulphated fatty acid esters, sulphonated ethers, and the higher molecular weight alkyl aryl sulphonates. Close packing of the straight-chain type products is furthermore closely allied with their superior detergent properties compared to the branch-chain wetting agents. As was pointed out previously, however, the branch-chain types are far superior as wetting agents. This difference in detergent efficiency between a wetting agent-type compound and an organic synthetic detergent is demonstrated with pieces of wool cloth which have first been impregnated with a standard soil mixture of carbon-black and oils and subsequently washed in one case with 0.2% of a wetting agent and in the other with a 0.2% solution of a detergent-type surface active compound. You will note that the pieces washed with a sulphated

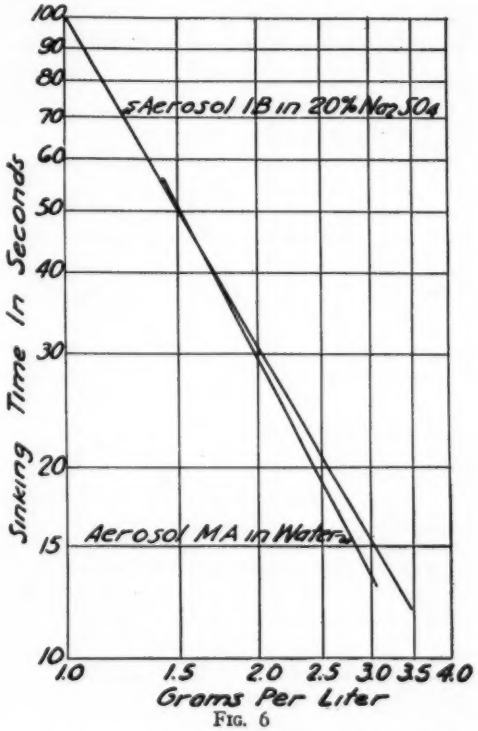


FIG. 6

higher alcohol are much lighter in color than the one washed with a true wetting agent type of material.

Detergent efficiency is influenced, not only by the type of organic detergent, but also upon the type of surface being cleaned, the type of soil to be removed, temperature, and furthermore, much depends upon the pH of the cleaning solution. Most soil carries a negative charge, and therefore, if it is at all possible, the surface from which the soil is to be removed should be made to assume the same charge as the soil, so that they will repel one another. As was shown by Neville *(7)* cellulose carries a negative charge in water. In the case of cellulose in water, the negative charge is more pronounced in the presence of alkali, and he was able to show that the higher the alkalinity, the more readily was the soil removed. In his experiments, carbon-black was used, this being typical of soils, inasmuch as it carries a negative charge. The addition of soap caused a considerable increase in detergent efficiency because (among other factors) the fabric assumed a more highly negatively charged condition than in the presence of the alkali alone. He also showed that the sulphated higher fatty alcohols, although fair detergents in themselves, are much more effective in the presence of alkali.

Wool and silk are quite dissimilar to cotton or other cellulosic materials, in that they are amphoteric in nature. That is to say, they may have a positive or a negative charge, depending upon the pH of the medium in which they are treated. As was shown by Sookne and Harris *(8)*, it was found that wool carries a positive charge below a pH of approximately 4.5, and carries a negative charge above this pH. Silk carries a positive charge at a pH below approximately 3.7, whereas it carries a negative charge at a pH above this value. Such being the case, it can readily be seen why washing silk and wool with the usual anion type detergents in an acid medium is less efficient than washing these fabrics in a slightly alkaline medium.

Cationic Surface Active Materials

So far, we have been dealing with "anion" wetting agents and surface active compounds. Anion surface active compounds have a surface active or nonpolar portion of the molecule which carries a negative charge. If a direct current is passed through an aqueous solution of such materials, the surface active portion of the molecule will migrate to the anode. In addition to the anionic-type materials, there is another class which, when dissolved in water and a direct current is passed through the solution, has a nonpolar group which deposits at the cathode or negative pole. Such products are termed "cationic." Representative materials of the latter group are primary and secondary amine acid salts, quartenary ammonium compounds, and sulphonium and phosphonium compounds (*see* Fig. 8).

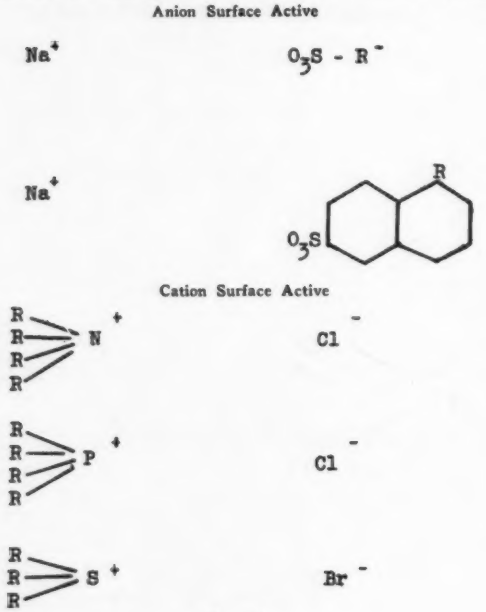


FIG. 8

If we mix anion and cation surface active materials together in proper proportions, we will obtain a precipitate because the two oppositely charged nonpolar portions unite to form a high molecular weight oil-like compound which is so oil-like in nature that it is thrown out of solution.

This leads us to speculate as to what will happen when we attempt to use cation and anion materials for cleaning, dyeing, finishing, or other applications. First, let us consider detergency with regard to cation surface active compounds. In the case of cotton carrying a negative charge, we note that when a cation surface active material is used, the carbon-black is more firmly bound, than if plain water were used. In this case the nonpolar cation is attracted by both the carbon-black and the cellulose, binding the two together more firmly. Likewise, we note the effect of adding alkali to the solution containing the cation surface active compound. Contrary to the improved results in using an alkali with an anion detergent, the efficiency is not appreciably increased.

It has been reported that cation surface active compounds have been found useful in scouring wool on the acid side *(9)*. These products are relatively new and no doubt many uses will be found for them.

Let us now consider wetting agents in relation to dyeing. Among the many dyes available, there are types which are known as acid and basic. Acid dyes are similar to anion surface active compounds in that the active portion—i. e., the color ion, carries a negative charge, whereas in the case of an anion surface active compound, the active portion likewise carries a negative charge. Upon adding an anion wetting agent to a solution of an acid dye, the solution remains clear.

Basic dyes are similar to cation surface active compounds, in that the active or color ion carries a positive charge, similar to the polar or surface active portion of a cation surface active compound carrying a positive charge. Upon adding a cation surface active compound to a solution of a basic dyestuff, the solution remains clear.

Now, if we add a solution of an acid dye to a solution of a basic dye, a precipitate will occur. The same occurs if we add a solution of a cation surface active compound to a solution of an acid dye, and likewise a precipitate will occur when we add a solution of an anion surface active compound to a solution of a basic dye.

It therefore is evident that care should be exercised in selecting the particular type of surface active compound to be used with a specific dyestuff. As was shown by Smith *(10)* anion wetting agents are of value in dyeing primarily because the fiber is wet

rapidly with consequent rapid swelling of the fiber, allowing the dyestuff to penetrate more readily, whereby more rapid and level dyeing is obtained. This is shown by the following experiment where an ordinary butcher's wrapping paper is dipped in an acid dyestuff solution, and in the other the same solution containing an anion wetting agent. We immerse them for the same length of time, withdraw them and note that the solution containing the wetting agent produces stronger and more level dyeing.

Naturally, wetting agents find considerable application in the general industrial field. For example, they are used in agricultural sprays where they promote wetting of foliage. They find application in unpigmented surface coatings where they produce a better bond between the coating and the surface. They also find application in the treatment of oil wells with acid solutions. In emulsified lubricants and grinding emulsions, they serve the purpose of promoting more intimate contact between the lubricant and the surfaces, and furthermore accelerate the setting of foreign particles in the lubricating emulsion. In alkali detergent mixtures, they promote greater cleaning efficiency and in solvent degreasing mixtures, considerably improve solvent action. Considerable quantities are used in making glass-cleaning preparations, and much is used in the photographic industry. The dry cleaning industry uses these materials in dry cleaning solvents and in spotting mixtures and considerable quantities of both anion and cation types are being used in the manufacture of pigments. Wetting agents also find application in the electroplating of metals where, by their use, a more uniform deposit is obtained and they reduce the tendency of spotting in rinsing the plated articles.

So far, wetting agents have not found extensive application in the paper industry. However, they are being used for such applications as reworking broke stock, in which case the stock can be wet much more readily than if no wetting agent were used. Other applications are in dyeing operations, where more rapid and more level dyeing is obtained, in the sealing of cartons, for which purpose the wetting agents are very effective in wetting the tape, especially in cold weather. They are useful for wetting certain classes of pigments, which are ordinarily difficult to wet and have been found of value in paper towelling, for conditioning felts and for washing felts.

May I emphasize in conclusion, the importance in approaching the problem of using surface active materials, of first determining whether wetting, detergent or dispersing action is involved and then (after conditions have been established) selecting with care the product most suitable to the case at hand.

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The Application of Synthetic Salt Cake

By Walter L. Savell[1]

Abstract

The product that has come to be known as synthetic salt cake is essentially a sintered composition of sulphur and soda ash. The proportions of soda ash to sulphur are substantially in the ratio of the molecular weight of soda ash to the atomic weight of sulphur. It is a grey, granular, nonhygroscopic material weighing 80 to 83 lb. per cu. ft. Inasmuch as it is applied in the kraft pulp process to replace sodium sulphate, commonly called salt cake, and since it is used to produce sodium sulphide by reduction in the recovery furnaces, as is the case with sodium sulphate, the name synthetic salt cake seems the best one to describe its nature and function in the kraft pulp process. The chemical reactions and the application of this material are discussed.

Differing from sodium sulphate in original composition, it is natural that technique of handling and application will vary from that followed in the use of the original salt cake. In the preparation of synthetic salt cake the mixing of the sulphur with the soda ash is carried on so that each particle of the latter takes on a quota of sulphur making it a chemical unit ready for reaction.

A secondary effect of the method of preparation is to give a large measure of protection of the alkali against moisture absorption from the air, because each particle presents a practically moistureproof surface of sulphur to the atmosphere.

There is a practical advantage in this condition, because it materially reduces the tendency of the synthetic salt cake to form lumps or to cake in storage. This, of course, makes for easy handling, storage and feeding. The synthetic salt cake may be taken from storage and fed directly to the point of application without passing through a grinder or pulverizer.

It is common practice, however, to pass it through a screen to remove bits of wood, nails, or other foreign matter, with which it may have been contaminated in handling and may interfere with mechanical handling equipment.

There is also a chemical advantage in the intimate physical combination of the sulphur and soda ash. Separation and segregation of the components are impossible so the ideal conditions are presented for immediate reaction of the two, when the proper temperature is reached.

In the production of sodium sulphide from sodium sulphate the reaction is exclusively one of reduction which, although it may conceivably take place in steps, may be illustrated by the equation:

$$Na_2SO_4 + 4C + 3000\ B.t.u. = Na_2S + 4CO \qquad (1)$$

With synthetic salt cake we desire to get the same

[1] Manager, Technical Service Division, The Mathieson Alkali Works, Inc., New York, N. Y.

end products but starting with a different material the conditions during reaction are necessarily different.

As a first step, we desire to bring about immediate reaction between the two components of the synthetic salt cake. This requires merely an increase in temperature which, if it takes place out of contact with carbon, will result in practically complete conversion to sodium sulphate in the presence of air.

$$Na_2CO_3 + S + 3O = Na_2SO_4 + CO_2 + 1950 \text{ B.t.u.} \quad (2)$$

Conversion of synthetic salt cake to sodium sulphate in this manner may be accomplished in the laboratory by heating it in a loosely covered crucible in a muffle furnace at a temperature of approximately 900 deg. C. The reaction product will be approximately 95 per cent sodium sulphate.

A number of variations in the composition of the final reaction products will be noted with variations in the temperature, to which the synthetic salt cake is heated and the amount of oxidation or reduction permitted. In loosely covered crucibles heated in air, reaction proceeds comparatively slowly at a temperature of 152 deg. C. but is rapid at 230 deg. C., and quite vigorous at 260 deg. C.

The figures in Table I indicate the course of the reactions for these conditions.

TABLE I

Sample	1	2	3
Maximum temperature.....	152 deg. C.	185 deg. C.	260 deg. C.
Total time heated—min.....	5.2	4.3	9.1
Loss of weight (chiefly CO_2), %	1.14	2.36	8.08
Analysis			
$Na_2S_2O_3$	0.64	2.24	44.23
Na_2S	....	....	6.05
Na_2SO_4	....	....	0.12
Free S	....	....	0.65
Na_2CO_3	....	....	48.02

As the conditions become more highly reducing, the proportion of sodium sulphide formed also increases. We have found that all of the following reactions can and do occur when conditions are appropriate.

$$3Na_2CO_3 + 3S = 2Na_2S + Na_2SO_3 + 3CO_2 \quad (3)$$
$$2Na_2CO_3 + 2S + 3O_2 \rightarrow Na_2SO_4 + 2CO_2 \quad (4)$$
$$2Na_2CO_3 + 2S + 2O_2 \rightarrow 2Na_2SO_3 + 2CO_2 \quad (5)$$
$$Na_2CO_3 + 2S + O_2 \rightarrow Na_2S_2O_3 + CO_2 \quad (6)$$
$$Na_2CO_3 + S + CO \rightarrow Na_2S + 2CO_2 \quad (7)$$
$$Na_2CO_3 + S + C \rightarrow Na_2S + CO_2 + CO \quad (8)$$

It must also be recognized that it is possible to lose a portion of the sulphur by direct oxidation if the synthetic salt cake is exposed directly to oxidizing conditions at high temperature—thus

$$S + O_2 \rightarrow SO_2 \quad (9)$$

However, the intimate nature of the sulphur-soda ash mixture causes this reaction to tend in the direction,

$$Na_2CO_3 + SO_2 \rightarrow Na_2SO_3 + CO_2 \quad (10)$$

The loss of sulphur by direct oxidation, as in Equation 9 reaches a maximum at approximately 5 per cent of the synthetic salt cake weight. This amounts to about 21.5 per cent of the sulphur present.

This extreme condition is attained when the synthetic salt cake is blown directly into a zone of high temperature (temperature of the reduction furnace) in a dry condition using an air blast to carry it. From this it may be reasonably assumed that approximately 25 per cent of the sulphur present is in the form of a surface cover on the particles of soda ash. The balance of the sulphur is presumably soaked into the soda ash particle, in such intimate form that any increase in temperature merely hastens the reaction between the two components of the synthetic salt cake.

Still another reaction is of practical importance in the application of synthetic salt cake. This is the one which occurs between the free sulphur which it contains and the organic components of black liquor. In fact, it is this reaction which has dictated one of the important conditions for economical application. When the synthetic salt cake is mixed with black liquor, a portion of the sulphur reacts to form hydrogen sulphide at temperatures of 200 to 300 deg. C. This type of reaction can be shown using a liquid hydrocarbon as a substitute for black liquor, thus—

$$C_{10}H_{22} + 11S = 10C + 11H_2S \quad (11)$$

When hydrogen sulphide is formed in this manner the sulphur so represented passes into the secondary oxidizing zone of a recovery furnace and is oxidized to sulphur dioxide which passes up the stack.

$$H_2S + 3O = H_2O + SO_2 \quad (12)$$

In this case the hydrogen sulphide is so weak an acid, that it cannot replace the carbon dioxide in the soda ash. Therefore, no reaction occurs between the soda ash and the evolved hydrogen sulphide. The sulphur dioxide finally formed would react with the soda ash if it could be brought in contact with it. Since the gases from the secondary zone of the furnace go to the stack the hydrogen sulphide formed in Equation 11 is lost unless recovered as sulphite by alkaline scrubbing beyond the furnace.

It is obvious from the nature of the synthetic salt cake, that it has an almost ideal chemical composition for the purpose. The direct application of heat without the presence of air creates a reducing condition. This is shown in Equation 3. Any reducing condition except that of Equation 10 predisposes the material to form sodium sulphide. Since all recovery furnaces necessarily operate with a reducing condition in the lower zone, it is logical to expect the synthetic salt cake to show a higher percentage reduction than that obtained in the use of sodium sulphate. This has been found to be the case in every application, regardless of the type of recovery furnace or the method used in feeding the salt cake.

In the study of thermal conditions surrounding the application of sodium sulphate and synthetic salt cake, the following discussion will throw some light on the practical results obtained.

Conditions Which Promote Reactions

In the presence of a large excess of oxygen (air) the sulphur and soda ash of the synthetic salt cake will tend to react as follows:

$$\underset{\text{soda ash}}{2Na_2CO_3} + \underset{\text{sulphur}}{2S} + \underset{\text{oxygen}}{3O_2} \rightarrow \underset{\substack{\text{sodium}\\\text{sulphate}}}{2Na_2SO_4} + \underset{\substack{\text{carbon}\\\text{dioxide}}}{2CO_2}$$

This reaction will liberate some 1950 B.t.u./lb. of synthetic salt cake reacted. Such a reaction, since it liberates heat, will proceed without the use of a high temperature. Indeed the use of an extremely high temperature will tend to stop this reaction.

It should be noted that since this reaction produces sodium sulphate, it will be necessary to reduce the sodium sulphate to sodium sulphide before it can be used. As this reduction requires the absorption of some 3000 B.t.u./lb. of sodium sulphate reduced, the overall heat *consumption* of these two reactions will be:

Change 1 lb. synthetic salt cake to 1.03 lb.. sodium sulphate

$$\frac{(326{,}310 + 94{,}385 - 270{,}560)}{136} 1.8 = 1950 \text{ B.t.u. liberated}$$

Change 1.03 lb. sodium sulphate to 0.57 lb. sodium sulphide

$$1.03 \frac{(326{,}310 - 89{,}850)}{142} 1.8 = 3{,}090 \text{ B.t.u. absorbed}$$

3090 — 1950 = 1140 B.t.u., net heat absorbed per lb. synthetic salt cake.

In the presence of a smaller excess of air the sulphur and soda ash of the synthetic salt cake will tend to react as follows:

$$\underset{\text{soda ash}}{Na_2CO_3} + \underset{\text{sulphur}}{S} + \underset{\text{oxygen}}{O_2} \rightarrow \underset{\text{sodium sulphite}}{Na_2SO_3} + \underset{\text{carbon dioxide}}{CO_2}$$

This reaction will liberate about 1080 B.t.u./lb. of synthetic salt cake. This reaction will proceed by itself, provided there is a small excess of oxygen (air) in the furnace. A high furnace temperature will tend to limit the reaction.

Since sodium sulphite must be reduced to sodium sulphide before it can be used, the overall heat *consumption* necessary to get sodium sulphide from the synthetic salt cake by this reaction will be:

1 lb. synthetic salt cake changed to 0.91 lb. sodium sulphite

$$\frac{(259{,}260 + 94{,}385 - 270{,}560)}{138} 1.8 = 1080 \text{ B.t.u. liberated}$$

0.91 lb. sodium sulphite reduced to 0.57 lb. sodium sulphide

$$0.91 \frac{(259{,}260 - 89{,}850)}{126} 1.8 = 2210 \text{ B.t.u. absorbed}$$

2210 — 1080 = 1130 B.t.u. net heat absorption per lb. synthetic salt cake.

In the presence of a smaller excess of oxygen (air) the soda ash and sulphur of the synthetic salt cake will tend to react as follows:

$$\underset{\text{soda ash}}{Na_2CO_3} + \underset{\text{sulphur}}{2S} + \underset{\text{oxygen}}{O_2} \rightarrow \underset{\text{sodium thiosulphate}}{Na_2S_2O_3} + \underset{\text{carbon dioxide}}{CO_2}$$

This reaction will liberate about:

$$\frac{(348{,}625 - 270{,}560)}{138} 1.8 = 1020 \text{ B.t.u./lb.}$$

The overall heat liberated will be about:

1 lb. synthetic salt cake changed to 1.15 lb. sodium thiosulphate liberates 1020 B.t.u.

1.15 lb. sodium thiosulphate changed to 0.57 lb. sodium sulphide absorbs

$$1.15 \frac{(254{,}240 - 185{,}578)}{158} 1.8 = 900 \text{ B.t.u.}$$

1020 — 900 = 120 B.t.u./lb. net heat liberated

When a weak reducing atmosphere exists in the furnace the soda ash and sulphur of the synthetic salt cake will tend to react as follows:

$$\underset{\text{soda ash}}{Na_2CO_3} + \underset{\text{sulphur}}{S} + \underset{\text{carbon monoxide}}{CO} \rightarrow \underset{\text{sodium sulphide}}{Na_2S} + \underset{\text{carbon dioxide}}{CO_2}$$

The overall heat consumption of this reaction will be about:

$$\frac{(296{,}988 - 278{,}620)}{138} 1.8 = 240 \text{ B.t.u./lb. synthetic salt cake}$$

When a stronger reducing atmosphere exists in the furnace the soda ash and sulphur of the synthetic salt cake will tend to react as follows:

$$\underset{\text{soda ash}}{Na_2CO_3} + \underset{\text{sulphur}}{S} + \underset{\text{carbon}}{C} \rightarrow \underset{\text{sodium sulphide}}{Na_2S} + \underset{\text{carbon dioxide}}{CO_2} + \underset{\text{carbon monoxide}}{CO}$$

The overall heat consumption of this reaction will be about:

$$\frac{(270{,}560 - 210{,}663)}{138} 1.8 = 780 \text{ B.t.u./lb. synthetic salt cake}$$

When a still stronger reducing atmosphere exists in the furnace the soda ash and sulphur of the synthetic salt cake will tend to react as follows:

$$\underset{\text{soda ash}}{Na_2CO_3} + \underset{\text{sulphur}}{S} + \underset{\text{carbon}}{2C} \rightarrow \underset{\text{sodium sulphide}}{Na_2S} + \underset{\text{carbon monoxide}}{3CO}$$

The overall heat consumption of this reaction will be about:

$$\frac{(270{,}560 - 169{,}134)}{138} 1.8 = 1320 \text{ B.t.u./lb. synthetic salt cake}$$

Mill Tests

The first large scale application of synthetic salt cake was conducted in a Babcock and Wilcox-Tomlinson recovery unit. In this case the synthetic salt cake was fed in the black liquor in exactly the same way that sodium sulphate was normally fed.

The synthetic salt cake was delivered in box cars. Unloading was done by hand by means of shovels and wheelbarrows. Each barrow-load was weighed and dumped into the boot of an elevator. From the elevator it dropped to a hammer mill and thence to a screen and thence to a pneumatic conveyor system which delivered it to the bins in front of the furnace. From these bins it dropped to the short automatic belt conveyor feeders which in turn dropped it into the dissolving tanks, through which black liquor circulates and was thus delivered in the black liquor to the furnace spray nozzles.

One of the troubles experienced in the early runs was due to the fact that an occasional piece of tramp iron would go through the system with the synthetic salt cake. Several times sparks resulting from the iron passing through the grinder caused the ignition of sulphur dust and flash fires. These fires extinguished themselves, when the grinder or feed was stopped, so they were never serious. It was also noted that a considerable amount of dust was formed by the grinding of the synthetic salt cake, and this dust was carried over into the Connersville blower used to operate the conveying system. In the blower the dust built up a cake that eventually created excessive friction and caused a shutdown. To remedy the latter condition a filter was installed between the cyclone separator and the blower.

An improvement in the properties of the synthetic salt cake made it unnecessary to grind it prior to screening so the hammer mill was not operated when this material was fed. It, therefore, bypassed the grinder onto the screen and then to the pneumatic conveyor in the usual manner. Incidentally, the improved synthetic salt cake eliminated the dust problem, so the air filter is no longer necessary.

Data are given in Tables I-V on a run covering the use of 10 carloads of synthetic salt cake fed into the black liquor and handled throughout as a standard salt cake. Eight complete tests were made, one test on each shift at the beginning of the run, and again one test on each shift near the end of the run.

The ten cars of synthetic salt cake were sufficient to make a complete replacement of all the chemicals in the system. Although a fairly high sulphidity was maintained in the white liquor throughout the 10-car run, it dropped from 29.0 to 27.25 per cent due to the reaction, Equation 11. This drop would have been considerably greater, as will be shown later, if it were not for the fact that a portion of the sulphur dioxide formed (Equation 12) was caught and returned by the heavy black liquor used in the scrubbing tower. A measurable amount of evaporation occurs in the

scrubber, so it accomplishes both economy of heat and chemicals.

At another mill a test run in a Babcock and Wilcox—Tomlinson recovery unit showed that it was easily possible to drop the normal sulphidity from 28 down to 22 per cent. In this case the synthetic salt cake was fed to the furnace in the black liquor. The losses encountered by reason of hydrogen sulphide formation were not mitigated since the system had no scrubber operating. The higher losses were evident in the stack gas analysis as well as in the analysis of the smelt and white liquor.

In two other mills synthetic salt cake was applied by air injection in a continuous flow. More than 1000 tons were used in this manner. The results obtained in both mills indicated a loss of sulphur by direct burning from the surface of the coated particles of soda ash (Equation 9). The loss in such application amounted to 10 to 30 per cent of the total sulphur content. White liquor sulphidities dropped as much as 3.5 to 4 per cent.

These mill tests confirmed conclusions reached in laboratory studies, namely:

(1) Synthetic salt cake should not be fed with black liquor because excessive sulphur losses would be experienced from hydrogen sulphide formation and its subsequent oxidation to sulphur dioxide (see Equations 11 and 12).

(2) Dry synthetic salt cake should not be blown with an excess of air directly into a high temperature zone of a recovery furnace because a heavy loss of sulphur will occur by oxidation of the sulphur coating on the particle of soda ash according to Equation 9.

(3) To obtain the natural advantages inherent in synthetic salt cake it should be fed in a dry condition into the reducing zone of the recovery furnace so as to establish and maintain a mass of the synthetic salt cake constantly melting down into the smelt. This method of feeding promotes Equation 3.

Inasmuch as the major portion of the sodium sulphide is formed by self-reaction—in other words, by the action of the sulphur itself—it is not necessary for the synthetic salt cake to be in immediate contact with a reducing agent when first introduced into the furnace. For this reason, it is preferable to feed it in a manner that will allow it to pile upon itself in the reducing zone of the furnace. The very liquid smelt which results then runs down over the carbon of the black ash and the reduction of the sodium sulphite, etc., takes place as the smelt moves to the discharge spout.

Intermittent feeding gives results which are often better than those obtained with continuous feeding. Mechanical feeders for both methods have been designed. Hand feeding with a shovel at intervals of 15 to 30 minutes gives excellent results, in any recovery furnace. Any mechanical feeder which duplicates this type of delivery of the synthetic salt cake into the furnace is equally satisfactory.

Synthetic salt cake is now being applied in all of the various types of recovery units installed in kraft mills of the south.

TABLE I.—Na_2O ADDED TO FURNACE

Test	Total black liquor, lb.	Na_2O, %	Na_2O in black liquor, lb.	Rate, salt cake feed, lb./min.	Fed during run, min.	Na_2O in salt cake, lb.	Total Na_2O added during test, lb.	Na_2O added during test, lb./hr.
1	89,500	14.50	12,970	35.0	232	3420	16,390	4,098
2	88,500	14.50	12,830	30.8	232	2940	15,770	3,943
3	84,000	14.40	12,100	38.8	213	3500	15,600	3,900
4	90,000	14.72	13,250	42.5	215	3845	17,095	4,274
5	80,500	14.20	11,430	32.8	229	3280	14,710	3,678
6	90,000	14.40	12,950	31.7	229	3000	15,950	3,988
7	105,500	14.84	15,650	29.2	231	2920	18,570	4,643
8	103,000	14.98	15,430	31.75	234	3220	18,650	4,663
Ave.	91,643	14.58	13,380	33.9	226	3244	16,621	4,156

TABLE II.—SULPHUR ADDED TO FURNACE

Test	Total black liquor, lb.	Sulphur, %	Sulphur in black liquor, lb.	Rate salt cake feed, lb./min.	Fed during run, min.	Sulphur in salt cake, lb.	Tot. sulphur added during test, lb.	Sulphur added during test, lb./hr.
1	89,500	1.80	1,610	35.0	232	2,050	3,660	915
2	88,500	1.77	1,565	30.8	232	1,735	3,300	825
3	84,000	2.19	1,840	38.8	213	2,050	3,890	973
4	90,000	2.10	1,890	42.5	215	2,300	4,190	1,048
5	80,500	1.80	1,450	32.8	229	1,820	3,270	818
6	90,000	1.78	1,602	31.7	229	1,800	3,402	851
7	105,500	1.95	2,046	29.2	231	1,690	3,736	934
8	103,000	1.82	1,875	31.75	234	1,820	3,695	924
Ave.	91,643	1.92	1,753	33.9	226	1,888	3,640	910

TABLE III.—STACK LOSSES, % OF CHEMICALS ADDED

		Na_2O Lost				Sulphur Lost		
Test	Na_2O fed per hr.	As Na_2SO_4, %	Other combinations, %	Total	Sulphur fed, lb./hr.	As Na_2SO_4	Sulphur lost, other combinations, %	Total
1	4,098	4.93	2.83	7.76	915	11.38	18.49	29.87
2	3,943	4.03	0.53	4.56	825	9.95	14.31	24.26
3	3,900	4.64	1.36	6.00	973	9.56	10.49	20.05
4	4,274	4.10	0.47	4.57	1048	8.59	11.46	20.05
5	3,678	4.40	0.41	4.81	818	10.27	10.88	21.15
6	3,988	4.08	0.93	5.01	851	9.87	11.51	21.38
7	4,643	3.92	1.19	5.11	934	10.07	10.61	20.68
8	4,663	3.73	1.61	5.34	924	9.75	13.10	22.85
Ave.	4,156	4.13	0.93	5.06	910	9.72	11.77	21.49

TABLE IV.—ANALYSES OF SMELTS

Test	NaOH	Na_2CO_3	Na_2S	Na_2SO_3 $Na_2S_2O_3$ as Na_2SO_3	Na_2SO_4	Na_2S as S	Reduction %	Dregs
1	0.00	74.90	17.10	3.01	1.04	0.22	96.7	3.73
2	0.00	70.70	18.40	2.66	4.00	0.36	89.3	3.88
2	0.00	71.80	18.58	2.82	2.18	0.26	93.8	4.35
3	0.00	70.70	17.54	2.60	5.63	0.25	84.9	3.28
3	0.00	73.40	19.56	2.95	0.42	0.22	98.7	3.45
4	0.00	70.70	20.20	3.54	2.76	0.07	93.0	2.73
5	0.00	72.20	17.82	3.28	3.12	0.44	91.2	3.14
6	0.00	75.30	18.29	2.76	1.75	0.25	95.0	1.65
7	0.00	76.20	17.70	2.62	1.04	0.28	97.0	2.16
8	0.00	72.30	19.02	3.52	1.63	0.47	95.4	3.06

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TABLE V.—SUMMARY OF STACK LOSSES—SYNTHETIC SALT CAKE
Basis—One Hour Running Time

		Na_2O Lost			Sulphur Lost				
Test	Gas stack conditions, cu. ft.	Gas std. condition, cu. ft.	Vel. of gases, f.p.m.	As Na_2SO_4, lb.	Other combinations, lb.	Total, lb.	As Na_2SO_4, lb.	As gases, lb.	Total, lb.	Na_2O lost, stack gases at s.t.p., lb./ft.	Sulphur lost, gases at s.t.p., lb./ft.
1	2,238,000	1,614,000	1320	202	116	318	104	169	273	.0001970	.0001689
2	1,950,000	1,344,000	1149	159	21	180	82	118	200	.0001338	.0001486
3	2,070,000	1,462,000	1221	181	53	234	93	102	195	.0001608	.0001341
4	1,926,000	1,332,000	1140	175	20	195	90	120	210	.0001462	.0001574
5	1,788,000	1,272,000	1053	162	15	177	84	89	173	.0001389	.0001358
6	1,896,000	1,368,000	1119	163	37	200	84	98	182	.0001459	.0001331
7	2,142,000	1,470,000	1262	182	55	237	94	99	193	.0001611	.0001313
8	2,142,000	1,500,000	1261	17	75	2+9	90	121	211	.0001659	.0001408
Average	1,987,000	1,391,000	1172	171	39	210	88	107	195	.0001604	.0001407

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Complete Flakt Drier Installation

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., August 17, 1940—Final details have now been completed in connection with the installation of the new Flakt drier at the plant of the Powell River Company at Powell River, B. C. This machine, which is of Swedish design, is one of the first of its kind to be manufactured in Canada, having been made almost entirely in Three Rivers, Quebec.

The drier is located in the sheet pulp plant building, which was recently doubled in size, and it is continuous with the Kamyr wet machine. Nearly one half of the building is taken up with the Kamyr machine, Flakt drier, baling press and handling equipment, the remainder being available for storage and tracks. The function of the drier is to take the sheet pulp from the Kamyr machine at about 50 per cent air dry and dry it further to an air dryness of 90 per cent or over.

This apparently simple operation requires a machine over 90 feet in length, about 16 feet in width, and some 17 feet in height, and has necessitated the running of a new line from the steam plant about 1500 feet long. From the outside the machine has the appearance of a gigantic steel box with glass windows at each end. Inside, it is packed with steam radiators between which pass chain conveyors joined together with light steel tubes. Floors of sheet steel divide the machine into 11 sections. The drying process is as follows:

The damp sheet of pressed, high grade sulphite pulp from the Kamyr machine enters the Flakt drier at the bottom. It is then carried along the entire length of the machine, doubling backwards and forwards eleven times, and finally emerges from the top of the far end, a hot, dry sheet ten feet in width ready for the slitting, cutting and baling processes.

The Flakt drier is very economical of steam. One reason for this is that the walls of the machine are heavily insulated, another is to be found in that important part of the equipment, the economizer. The economizer works like the radiator of a car, but in reverse, its object being to warm the incoming air by means of the waste heat from the machine. The warm, moist, outgoing air is conducted through a mass of narrow ducts made of a special alloy, and into the atmosphere. The incoming fresh air is sucked between these ducts, gathering up heat from them, and into the drier, where it is further heated by means of the steam radiators. The cycle is completed by the air passing back to the economizer with its burden of moisture from the drying pulp. The circulation of the air in the drier, is accomplished by six fans rotating at a speed of 3000 revolutions every minute. These fans are beautiful examples of high grade engineering; light and perfectly balanced, a touch will rotate them.

Visitors to the plant are immediately impressed by its airiness and cleanliness, and by the attractive appearance of the machinery. In fact, the somewhat dainty blue in which the latter is finished drew many humorous comments from those who are accustomed to somewhat more sombre effects in such utilitarian equipment.

Co_2 Analysis Simplified

For measuring the percentage of CO_2 in the flue gases of boiler furnaces, Bacharach Industrial Instrument Company, 7000 Bennett street, Pittsburgh, Pa., has announced a chemical type CO_2 analyzer, trade-name Fyrite. An important new feature is the gas sampling equipment which includes a primary flue filter with a replaceable filtering thimble. Other new features and improvements are said to make the instrument even simpler, faster, and more fool-proof than the model for servicing domestic heating equipment which was introduced last year.

Operation is very simple. A flue gas sample of known volume is pumped to the instrument by hand with a rubber bulb and trapped in the instrument automatically by pulling off the sampling hose. The instrument is then turned upside down and back again to mix the gas sample with the absorbing reagent, which is said to be good for several hundred samplings before replacement is required. The suction created due to the complete absorption of the CO_2 pulls the absorbing fluid up an amount equal to the CO_2 absorbed. Consequently, it level shows the percentage of CO_2 in the gas.

The instrument is a precisely formed plastic molding of water-white transparency and compact modern design. The gauge fits snugly into the hand, and its proportions are balanced so that it is not easily upset when placing it on a table, bench or ledge.

Pulp and Paper Lead Payrolls

According to figures issued by the British Columbia Government, lumbering and the pulp and paper industry led the province in increases in industrial payrolls during 1939 despite the fact that this period only covered the first four months of the war, and that lack of shipping caused some lumber plants to close down for part of this period.

The lumber industry showed a gain of $2,250,000 on a payroll of $28,853,601, which with 27,388 employees works out at an average of $27.14 per week. This is an improvement of 55 cents in the weekly average over the previous year.

In the pulp and paper industry the gain was $611,000 on a payroll of $4,688,341.

Imports of Paper and Paper Making Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard, bleached Sulphite More Acute—Some Grades of Old Waste Lower.

Effective September 30, 1939, under Treasury Decision 49,970, all publications, exchanges and trade associations, were denied access to import manifests at the New York Customs House. The Paper Trade Journal and other interested parties have vigorously protested this ruling, and as soon as the order of the Treasury Department is modified or rescinded, full publication of all manifests will be resumed in these columns. In the interim, the Paper Trade Journal is making every possible effort to gather all available information from manifests, at various outside sources.

NEW YORK IMPORTS

WEEK ENDING AUGUST 17, 1940

SUMMARY

Cigarette paper .....328 cs.
Newsprint .....2,779 rolls
Wrapping paper .....35 bls.
Cellophane paper .....6 cs.
Tissue paper .....84 bbls.
Writing paper .....1 cs.
Miscellaneous paper .....71 cs.

CIGARETTE PAPER

Rohner Gehrig & Co., ——, Liinahamari, 328 cs.

NEWSPRINT

H. G. Craig Co., Inc., ——, Donnacona, 362 rolls.
International Paper Co., ——, Gatineau, 287 rolls.
H. G. Craig Co., Inc., ——, Donnacona, 385 rolls.
H. G. Craig Co., Inc., ——, Donnacona, 339 rolls.
International Paper Co., ——, Gatineau, 293 rolls.
H. G. Craig Co., Inc., ——, Donnacona, 346 rolls.
Jay Madden Corp., ——, Liinahamari, 767 rolls.

WRAPPING PAPER

J. B. Morris Co., Inc., ——, Liinahamari, 35 bls.

CELLOPHANE PAPER

Sherwin Bros., ——, Yokohama, 6 cs.

TISSUE PAPER

Jay Madden Corp., ——, Liinahamari, 84 bbls.

WRITING PAPER

——, *Excambion,* Lisbon, 1 cs.

MISCELLANEOUS PAPER

Japan Paper Co., ——, Yokohama, 43 cs.
T. N. Fairbanks Co., ——, Yokohama, 11 cs.
Frismer, Inc., ——, Yokohama, 6 cs.
H. Reeve Angel & Co., Inc., ——, Yokohama, 9 cs.
——, ——, Yokohama, 2 cs.

RAGS, BAGGINGS, ETC.

Irving Trust Co., *Barroso,* Rio, 83 bls. old cloths.
Irving Trust Co., *Barroso,* Recife, 65 bls. old cloths.
Castle & Overton, Inc., *Santos,* Buenos Aires, 15 bls. rags, 11 bls. threads, 19 bls. cuttings, 37 bls. old canvas.

OLD ROPE

Irving Trust Co., *Barroso,* Rio, 118 bls.

GLUE STOCK

Rex & Reynolds, ——, Marseilles, 130 bags.

CASEIN

American British Chemical Supplies, *Mormacgull,* Buenos Aires, 2,000 bags, 100,000 kilos.
Balfour Guthrie & Co., *Mormacgull,* Buenos Aires, 847 bags, 50,820 kilos.

WOOD PULP

Pulp Sales Corp., ——, Petsamo, 508 bls. prime pulp, 4,483 bls. prime strong sulphate, 1,143 bls. prime strong sulphite.
Pulp Sales Corp., ——, Liinamahari, 1,308 bls. prime strong sulphate, 261 tons; 1,740 bls. prime strong sulphite, 292 tons.

WOOD PULP BOARDS

Jay Madden Corp., ——, Petsamo, 37 bls., 115 rolls.

BOSTON IMPORTS

WEEK ENDING AUGUST 17, 1940

——, ——, Shanghai, 100 bls. cotton waste.

PHILADELPHIA IMPORTS

WEEK ENDING AUGUST 17, 1940

Castle & Overton, Inc., *Santos,* Buenos Aires, 98 bls. old cottons, 49 bls. old cloths.

Chas. S. Bassett Gets New Line

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., August 19, 1940—Chas. S. Bassett, 10 High street, has become sole New England agent for twines and cordage for Schoolfield & Co., Inc., New York, who are sole selling agents for Cunard Mills, Carrollton, Ga.; Mandeville Mills, Carrollton, Ga.; American Yarn and Processing Company, Mt. Holly, N. C.; Globe Mills Company, Mt. Holly, N. C., and Riverside and Dan River Cotton Mills, Inc., Danville, Va.

Japan's Pulp Schedule Lags

WASHINGTON, D. C., August 19, 1940—Japan's production of wood pulp is falling far below the levels set in the five-year plan formulated three years ago, the Commerce Department reports. Shortage of electric power and coal, augmented by the scarcity of construction materials for projected plants, is held largely responsible. The five-year plan called for a 1940 production of paper and rayon pulp of 1,507,000 tons.

Container Corp. Completes New Division

FORT WORTH, Texas, August 19, 1940—The Container Corporation of America announces the completion of its new Texas manufacturing division at 2617 W. 7th street. The plant has facilities for making both folding cartons and corrugated shipping containers. J. R. Neil is director of manufacturing and sales.

New York Paper and Pulp Market Review

Paper and Pulp Markets Continue To Reflect Seasonal Quiet And Are a Little Weaker At This Date — Rag Market Slow — Prices on Some Grades of Paper Stock Off Including No. 1 Mixed Paper.

Office of the PAPER TRADE JOURNAL,
Wednesday, August 21, 1940.

Wholesale sales during the current week are moderately good in many grades of paper, according to reports received from many manufacturers' representatives, jobbers, and general paper merchants. From these reports the volume of sales appears to be around 7 per cent higher than at this date last year, with a decline of about 3 per cent from the high point in June.

The general business outlook continues favorable. Some hesitation appears reflected in industrial purchasing and commodity prices are fairly stable.

The index of general business activity rose to 101.9 per cent for the week ended August 10, from 101.5 per cent for the preceding week, compared with 91.3 per cent for the corresponding week last year.

Paper production of 227 mills for the week ended August 10 was estimated at 91.1 per cent, compared with 82.4 per cent for 1939, with 77.2 per cent for 1938, with 82.1 per cent for 1937, and with 81.5 per cent for the corresponding week in 1936.

Paper board production for the week ended August 10 was 74.0 per cent, compared with 71.0 per cent for 1939, with 65.0 per cent for 1938, with 75.0 per cent for 1937, and with 74.0 per cent for the corresponding week in 1936.

Production of newsprint in North America reached a new high record of 445,287 tons for July, 1940. Production of domestic mills totaled 82,579 tons. Stocks at domestic mills at the end of July, 1930, totaled 13,893 tons.

The present price of $50 per ton on newsprint paper in rolls is expected to be continued by domestic and Canadian mills through the first 1941 quarter.

Mechanical Pulp

No important change in the mechanical pulp market has been reported this week. Prices are fairly firm, with domestic and Canadian pulp currently quoted at from $45 to $46 per ton, delivered.

Chemical Pulp

The chemical pulp market is a little weaker this week, with spot prices less firm. Good grades of foreign unbleached sulphite are scarce and the position of this grade is strong. The weekly estimate of all kinds of pulp on dock is 117,000 tons at this date. Prices on domestic and Canadian kraft pulp are lower and currently quoted at from 3.00 to 3.25, f.o.b., pulp mill.

Rags

Limited buying of a few grades of rags is reported in most quarters of the market at this date, with tonnage ordered relatively small. No important change in prices has been reported.

Old Rope and Bagging

Mill buying of old rope continues steady with some anxiety apparent among some buyers regarding future supplies, as little if any foreign Manila rope is now reaching this market and domestic supplies have never been adequate to meet normal requirements. Prices remain unchanged.

Trading in old bagging continues in limited volume. No important change in prices has been reported during the current week.

Old Waste Paper

The old waste paper market continues to reflect seasonal quiet, with prices generally weaker and the whole market in a condition that may be termed soft. Prices hold unchanged, excepting on four grades. White ledger stock is lower and currently quoted at from 1.95 to 2.05 and colored ledger stock is lower and currently quoted at from 1.40 to 1.50. Strictly folded news is down to .45 to .47½, and No. 1 mixed paper is off and currently quoted at from .32½ to .35.

Twine

No important change in the twine market has been reported this week. Prices on all standard grades of hard and soft fiber twines continue unchanged at prevailing market quotations.

Paper Merchants To Meet in Cleveland

The next meeting of the Central States Paper Trade Association will be held in a private dining room of the Hotel Statler, Cleveland, Ohio, on Wednesday, September 4, 1940, at 11:00 A. M., and the next meeting of the Middle States Wrapping Paper Association will be held in a private dining room of the Hotel Statler, Cleveland, Ohio, on Thursday, September 5, 1940, at 11:00 A. M. There are a number of very important matters to be discussed at that time according to John L. Richey, secretary-treasurer of both associations.

First must be considered the decision of the National Paper Trade Association to insist that all members of the Central States Paper Trade Association be members of the National Paper Trade Association.

Secondly, the operation of fine paper merchants under world war conditions, as well as under conditions occasioned by the political campaign and the impending program on National Defense, which will include the problem of the merchants due to probable mobilization of the National Guard and Reserves, and the proposed compulsory military training program.

Third, the effect of taxes about to be levied and further taxation to be considered next year, as it affects merchant operation.

Fourth, the beginnings of a trend of mill policies toward pricing bases which may affect merchants' margins of profit.

Fifth, the present situation in business as it affects the sale of various of our principal commodities.

Sixth, the need for a more firmly united front in the handling of all these problems on the part of the paper merchant.

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, August 21, 1940.

BLANC FIXE—Prices on blanc fixe are firm and unchanged and conform to prevailing market levels. The pulp is currently quoted at $35 per ton, in barrels, at works; the powder is currently quoted at $50 per ton, f.o.b., works. Demand reported moderate for the week.

BLEACHING POWDER—Quotations on bleaching powder are firm. Demand reported steady for the week. Bleaching powder is currently quoted at $2 per 100 pounds, in drums, at works.

CASEIN—Prices on casein are firm and unchanged for the week. Standard domestic casein, 20-30 mesh, is currently quoted at from 13½ to 14½ cents per pound; 80-100 mesh, at from 14 to 15 cents per pound. All prices in bags, car lots. Argentina casein, 20-30 mesh, is currently offered at from 11½ to 12½ cents per pound. Quotations on French casein are nominal.

CAUSTIC SODA—Quotations on caustic soda are firm and continue unchanged at prevailing market prices. Demand continues steady. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Prices on china clay are firm and conform to prevailing market levels. Demand reported moderate at this date. Domestic filler clay is currently quoted at from $7 to $15 per ton; coating clay at from $11 to $22 per ton, at mines. Imported clay is currently offered at from $13 to $25 per ton, ship side.

CHLORINE—Quotations on chlorine are firm and unchanged. Demand reported good for the week. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported firm for the week with prices higher, "G" gum rosin is currently quoted at $1.70 per 100 pounds, in barrels, Savannah. "FF" wood rosin is currently quoted at $1.67 per 100 pounds, in barrels, New York.

SALT CAKE—Prices on salt cake are firm and nominal. Demand good. Domestic salt cake is currently quoted at $17 per ton, in bulk; chrome cake at $16 per ton. All prices in car lots, f.o.b., shipping point. The quotation of $10 per ton on imported salt cake is nominal.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market levels. Demand reported fair for the week. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are firm and continue unchanged at prevailing market levels. Pearl is currently quoted at $2.90 per 100 pounds; powdered starch at $3 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Demand reported good for the current week. The commercial grades are currently quoted at $1.15; iron free at $1.60 per 100 pounds. All prices in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and conform to prevailing market levels. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $19 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mines. Quotations on imported talc are nominal.

MARKET QUOTATIONS

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Delivered Zone A			
Northern, Extra Quality	$5.25	@	$5.75
Superstandard	4.87½	"	5.25
Northern Standard Wrapping	4.37½	"	4.62½
Standard Wrapping	4.25	"	—
Tissues—Per Ream—Carlots			
White No. 1	.97½	"	—
White No. 1 M. G.	.95	"	—
White No. 1½	.80	"	—
White No. 2	.75	"	—
Anti-Tarnish M. G.	.80	"	—
Colored	.85	"	—
Kraft	.87½	"	—
Manila	.77½	"	—
Unbl. Toilet, 1 M.	3.75	"	—
Bleached Toilet	5.26	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.10	"	—
Bleached, Jr.	3.60	"	—
Manila—per cwt.—C. l. l. a.			
No. 1 Jute	8.25	@	10.25
No. 1 Manila Wrapping, 35 lb.	5.25	"	—
No. 2 Manila Wrapping, 35 lb.	5.00	"	—
Boards, per ton—			
News	35.00	@	40.00
Chip	35.00	"	40.00
Sgl. Mla. Ll. Chip	55.00	"	57.00
White Pat. Coated	67.00	"	70.00
Kraft Liners	55.00	"	—
Binders Boards	73.00	"	80.00

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers	
100% Rag Ext. No. 1	$39.10 @ $46.00		$40.25 @	$47.25
100% Rag	31.05 " 36.50		32.20 "	37.75
85% Rag	.... "		29.90 "	35.00
75% Rag	23.60 " 27.75		24.75 "	29.00
65% Rag	.... "		21.65 "	26.25
50% Rag	17.55 " 21.50		18.70 "	22.75
25% Rag	14.65 " 17.75		15.80 "	19.25

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers	
No. 1	$8.95 @ $11.00		$10.10 @	$12.25
No. 2	8.05 " 9.75		9.25 "	11.25
No. 3	7.60 " 9.25		8.50 "	10.75
No. 4	7.30 " 9.00		8.50 "	10.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper, Delivered in Zone 1:

No. 1 Glossy Coated	$11.90	@	$13.50
No. 2 Glossy Coated	10.35	"	11.75
No. 3 Glossy Coated	9.55	"	11.00
No. 4 Glossy Coated	9.15	"	10.50
No. 1 Antique (watermarked)	8.35	"	9.50
No. 2 Offset	7.70	"	9.00
A Grade E. F.	7.50	"	8.75
A Grade S. & S. C.	7.75	"	9.00
B Grade E. F.	6.95	"	8.00
B Grade S. & S. C.	7.20	"	8.25
C Grade E. F.	6.65	"	7.75
C Grade S. & S. C.	6.90	"	8.00
D Grade E. F.	6.40	"	7.50
D Grade S. & S. C.	6.65	"	7.75

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	Nominal		
Dry	Nominal		
(Delivered)			
No. 1 Domestic and Canadian	45.00	@	46.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.72½	@	4.00
Prime Qualities—			
Easy-Bleaching Sulphite	3.17½	"	3.75
Strong Unbleached Sulphite	3.17½	"	3.75
(On Dock, Atlantic Ports)			
Kraft Bleached	4.12½	"	4.00
Kraft Light & Strong	3.50	"	3.75
Kraft No. 1	3.40	"	3.60
(F. o. b. Pulp Mill)			
Kraft Domestic and Canadian	3.00	"	3.25
(Delivered)			
Soda Bleached	3.30	"	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1.	6.75	@	7.00
Silesias No. 1	4.60	"	4.75
New Unbleached	6.50	"	6.75
Blue Overall	4.35	"	4.50
Fancy	3.25	"	3.50
Washables	2.00	"	2.15
Mixed Khaki Cuttings	2.75	"	3.00
O. D. Khaki Cuttings	3.15	"	3.35

Old Rags

White, No. 1—			
Repacked	3.25	"	3.50
Miscellaneous	2.75	"	3.00
White, No. 2—			
Repacked	2.50	"	2.75
Miscellaneous	2.00	"	2.25
Thirds and Blues—			
Repacked	2.00	"	2.25
Miscellaneous	1.75	"	1.90
Roofing Rags—			
No. 1	.95	"	1.00
No. 2	.80	"	.85
No. 3 (bagging)	.90	"	1.00
No. 4	.60	"	.65
No. 5A	.60	"	.65

Foreign Rags

All prices nominal

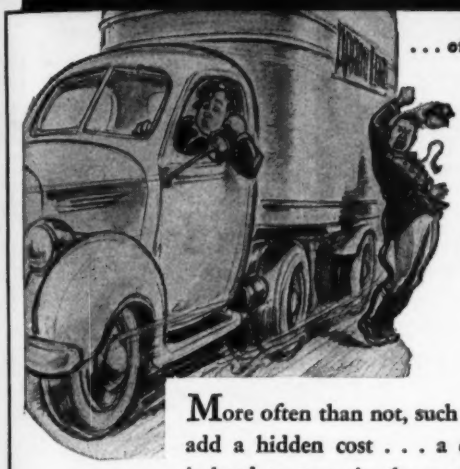
New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxford	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—

HIT OR MISS METHODS



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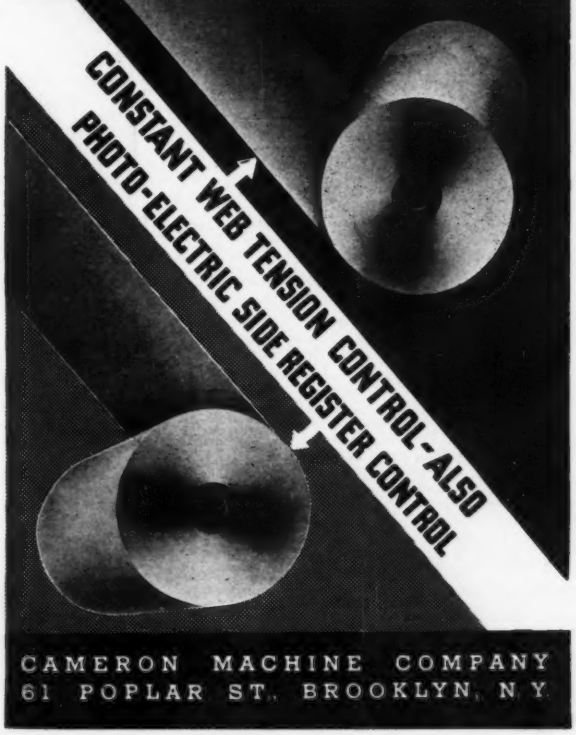

CAMERON MACHINE COMPANY
61 POPLAR ST., BROOKLYN, N.Y.

No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	"	4.75
No. 2 White Cotton.	3.25	"	3.75
No. 3 White Cotton.	2.50	"	3.00
No. 4 White Cotton.	1.90	"	2.20
Extra Light Prints..	2.00	"	2.40
Ord. Light Prints...	1.75	"	2.15
Med. Light Prints...	1.55	"	1.95
Dutch Blue Cottons.	2.25	"	2.50
French Blue Linens..	3.00	"	—
Checks and Blues...	2.00	"	—
Linsey Garments....	1.90	"	2.00
Dark Cottons.....	1.50	"	1.60
Old Shopperies.....	1.30	"	1.45
New Shopperies.....	1.45	"	1.50
French Blues.....	2.25	"	2.50

Old Rope and Bagging

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	2.75	@	3.00
Domestic	2.50	"	2.75
Wool Tares, light...	2.00	"	2.25
Wool Tares, heavy..	2.12½	"	2.25
Bright Bagging	2.25	"	2.50
Manila Rope—			
Foreign	4.75	"	5.00
Domestic	4.50	"	4.75
Jute Threads.....	2.62½	"	2.75
Sisal Strings.....	2.10	"	2.35
Mixed Strings.....	1.10	"	1.20

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	3.10	@	3.25
Ordinary Hard White No. 1....	2.25	@	2.50
Soft White No. 1..	1.80	"	1.90
Soft White Extra..	2.50	"	2.60
Flat Stock—			
Stitchless	1.10	"	1.25
Overissue Mag.....	.90	"	1.00
Solid Flat Book...	.80	"	.85
Crumbled No. 1...	.70	"	.75
Ledger White Stock.	1.95	"	2.05
Ledger Stock Colored	1.40	"	1.50
Manila—			
New Env. Cut....	1.70	"	1.80
New Cuttings.....	1.30	"	1.40
Old Kraft Machine Compressed bales..	1.60	"	1.70
News—			
No. 1 White News	1.75	"	1.90
Strictly Overissue.	.70	"	.75
Strictly Folded....	.45	"	.47½
Corrugated	.60	"	.65
No. 1 Mixed Paper...	.32½	"	.35

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.19½	@	—
White Hemp.....	.19½	"	—
Fine Polished—			
Fine India.....	.24	"	—
Unpolished—			
Box	.15	"	—
Paper Makers.....	.15¾	"	—
Tube Rope.....	.17	"	—
Wall Paper.....	.16	"	—
Wrapping	.18¾	"	—
Soft Fiber Rope...	.16¾	"	—
Cotton	.21½	"	—

(Hard Fiber)

Medium Java.....	.20	"	—
Mex. Sisal.....	.17	"	—
Manila	.24¾	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f.o.b. Phila.)

Shirt Cuttings—			
New White No. 1.	.06	@	.06¼
New White No. 2.	.03½	"	.04
Light Silesias.....	—	"	.04½
Silesias, No. 1.....	—	"	.04
Black Silesias, soft	—	"	.02¾
New Unbleached...	.06	"	.06¾
Washable Prints...	.02¼	"	.02½
Washable, No. 1..	—	"	.01¼
Blue Overall.....	.03¾	"	.04
Cottons—According to grades—			
Washable shredding	—	"	.01
Fancy Percales....	—	"	.03
New Black Soft....	—	"	.02¼
New Light Seconds	—	"	.04
New Dark Seconds	—	"	1.50
Khaki Cuttings—			
No. 1 O. D.....	.03½	"	.03¾
No. 2 Mixed.....	.01¾	"	.02
Corduroy	.01¾	"	.01½
New Canvas.....	.04½	"	.05
New Black Mixed.	—	"	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	3.25	@	3.75
Miscellaneous	2.50	"	2.75
Thirds and Blues—			
Miscellaneous	1.55	"	1.65
Repacked	1.35	"	1.50
Black Stockings (Export)	3.50	"	4.00
Roofing Stock—			
Foreign No. 1....Nominal			
Domestic No. 1...	.90	"	1.00
Domestic No. 2...	—	"	.80
Roofing Bagging..	—	"	.70

Bagging

(f.o.b. Phila.)

Gunny, No. 1—			
Foreign .....Nominal			
Domestic	2.25	@	2.75
Manila Rope.....	—	"	4.50
Sisal Rope.....	1.75	"	2.00
Mixed Rope.....	.75	"	1.00
Scrap—			
No. 1.....	2.50	"	2.75
No. 2.....	1.10	"	1.15
Wool Tares, heavy..	3.50	"	3.70
No. 1 New Light Burlap	3.00	"	3.50
New Burlap Cuttings	2.00	"	2.25

Old Papers

(f.o.b. Phila.)

Shavings—			
No. 1 Hard White	2.50	@	2.55
No. 2 Hard White	2.10	"	2.15
No. 1 Soft White	2.00	"	2.10
No. 2 Soft White	1.60	"	1.75
No. 1 Mixed.....	.90	"	1.00
Solid Ledger Stock..	1.90	"	2.00
Ledger Stock, white.	1.75	"	1.80
Ledger Stock, colored	1.25	"	1.30
No. 1 Books, heavy..	.85	"	.90
Manila Cuttings.....	1.75	"	1.80
Print Manila.....	.60	"	.65
Container Manila....	.50	"	.55
Kraft Paper.....	1.50	"	1.60
No. 1 Mixed Paper..	.40	"	.45
Straw Board Chip...	.40	"	.45
Binders Board Chip..	.40	"	.45
Corrugated Board....	.70	"	.75
Overissue News.....	.75	"	.80
Old Newspapers.....	.50	"	.55

BOSTON

Old Papers

(f.o.b. Boston)

Shavings—			
No. 1 Hard White	2.75	@	3.00
No. 1 Soft White	2.00	"	2.25
No. 2 Mixed.....	.75	"	.80
Solid Ledger Books..	1.50	"	1.75
Overissue Ledger Stock	1.75	"	2.00
Mixed Ledgers.....	.85	"	.90
No. 1 Heavy Books	1.10	"	1.20
No. 1 Books, light..	.65	"	.75
Crumpled Stitchless Book Stock.....	.55	"	.65
Manila Env. Cuttings	1.85	"	2.00
Manila Envelope Cuttings, extra quality	2.35	"	2.60
White Blank News..	1.40	@	1.50
No. 1 Kraft.....	1.40	@	1.50
Extra No. 1 Kraft...	1.60	"	1.90
Mixed Papers.....	.40	"	.45
Print Manila.....	.50	"	.55
Container Manila...	.60	"	.70
Old Newspapers.....	.50	"	.55
Paper Wool Strings.	.95	"	1.10
Overissue News.....	1.00	"	1.10
Box Board Chips....	.40	"	.45
Corrugated Boxes....	.60	"	.65
Kraft corrugated boxes	1.15	"	1.25
New Kraft corrugated cuttings	2.12½	"	2.25
New Kraft Cuttings.	2.00	"	2.25
Screening Wrappers	.60	"	.70

Bagging

(f.o.b. Boston)

Gunny Bagging—			
Foreign	2.75	@	—
Domestic	2.25	"	2.50
Sisal Rope.....	2.25	"	2.50
Mixed Rope.....	.85	"	1.00
Transmission Rope—			
Foreign	2.40	"	2.60
Domestic	2.25	"	2.40
Soft Jute Rope.....	3.00	"	3.25
Manila Rope—			
Foreign	4.85	"	5.00
Domestic	4.25	"	4.50
Jute Carpet Threads.	1.50	"	1.75
Gunny Bagging—			
Foreign	2.75	"	2.85
Domestic	2.25	"	2.50
Bleachery Burlap....	4.00	"	3.25
Scrap Burlap—			
Foreign	2.40	"	2.50
Domestic	2.50	"	—
Scrap Sisal.....	2.25	"	2.50
Scrap Sisal for Shredding	2.30	"	2.65
Wool Tares, Heavy..	2.40	"	2.50
New Burlap Cuttings	3.75	"	4.00
Aust. Wool Pouches..	3.00	"	3.15
Heavy baling bagging	2.25	"	2.40
Paper Mill Bagging..	1.75	"	2.00
No. 2 Bagging.....	.75	"	.80

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	—	@	.03
Fancy Percales....	.04	"	.04¼
New White No. 1.	.07½	"	.07¾
New Light Flannelettes	.05	"	.05¼
Canton Flannel, Bleached	.07	"	—
Silesias No. 1	.05	"	—
New Black Silesias..	3.00	"	3.25
Red Cotton Cuttings	.04	"	.05
Soft Unbleached...	.07	"	.07½
Blue Cheviots.....	.05	"	.05½
Fancy	.02	"	.02½
Washable	.02	"	.02½
Cottons—According to Grades—			
Blue Overalls.....	.04½	"	.05
New Black, Soft..	.03	"	.03¼
Khaki Cuttings.....	.03	"	—
O. D. Khaki.....	.03	"	.03¼
Corduroy	.02¾	"	.03
New Canvas.....	.06¾	"	.07¼
B. V. D. Cuttings...	.07	"	.07¼

Domestic Rags (Old)

(F. o.b. Boston)

White No. 1—			
Repacked	2.75	"	3.75
Miscellaneous	2.40	"	2.60
White No. 2—			
Repacked	1.90	"	2.00
Miscellaneous	2.00	"	2.25
Twos and Blues.....	1.50	"	2.00
Old Blue Overalls ..	1.60	"	2.00
Thirds and Blues—			
Repacked	—	"	1.25
Miscellaneous	—	"	1.00
Black Stockings.....	3.50	"	4.00
Roofing Stock—			
No. 1.....	1.00	"	1.25
No. 2.....	—	"	1.10
No. 3.....	—	"	.90

Foreign Rags

(F. o. b. Boston)

Canvas	.04¼	@	—
Dark Cottons.....(nominal)			
Dutch Blues.....(nominal)			
New Checks and Blues(nominal)			
Old Fustians.....(nominal)			
Old Linsey Garments.(nominal)			
New Silesias.....(nominal)			

CHICAGO

Waste Paper

(f.o.b. Chicago)

Shavings—			
No. 1 White Envelope cuttings....	3.15	@	—
No. 1 Hard White	2.50	"	2.65
No. 1 Soft White.	2.00	"	2.20
Ledger and Writings	.85	"	.95
Solid Books.....	.95	"	1.10
Blanks	1.50	"	1.60
Krafts	1.40	"	1.50
New Kraft Cuts.....	1.60	"	1.75
Overissue News.....	1.00	"	1.10
Old Newspapers—			
No. 1 Folded News	.70	"	.80
No. 1 Mixed Paper	.40	"	.50
Roofing Stocks—			
No. 1.....	.95	@	1.00
No. 2.....	.85	"	.90

Overissue Demand Heavy in Ceylon

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 22, 1940—Normally over 6,000 tons of overissued newspapers are sold each year in Ceylon, according to a report received from the American Consulate in Colombo. Prior to the outbreak of the war, virtually the entire supply of these papers came from the United Kingdom, the United States share in the trade being less than 1 per cent. During the first quarter of 1940, however, there has been a considerable increase in the amount of over-issued newspapers imported from the United States, presumably through the inability of shippers in the United Kingdom to meet the demand.

The chief advantages enjoyed by British suppliers are a 10 per cent tariff preference and the fact that British shipments do not contain colored paper or small size papers. The market for overissued newspapers in Ceylon is restricted to the type of newspapers known as white overissues. There is a constant, steady demand in Ceylon for overissued newspapers and the Consulate has received from various local firms inquiries as to possible American sources of supply. Therefore, American exporters who can supply the demand in this market and meet the price competition should be able to do a good business here.

Paper Business Is Improving

BOSTON, Mass., August 19, 1940—The paper business is improving, according to reports here, with the trade anticipating a good fall. Wholesalers are buying earlier than usual for the fall season. Prices are firm, with a rather general feeling that present levels are low, compared with the cost of raw material.